POOR LEGIBILITY

PORTIONS OF THIS DOCUMENT MAY BE UNREADABLE, DUE TO THE QUALITY OF THE ORIGINAL

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

Site Name: ACRYLUX PAINT MANUFACTURING COMPANY **EPA ID#:** FLD050430701

Alias Site Names: NONE

2410

City: FT. LAUDERDALE **County or Parish:** Broward **State:** Florida

Refer to Report Dated: 7/26/94 **Report type:** SIP

Report developed by: BVWST

DECISION:

|X| **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**

|X| 1a. Site does not qualify for further remedial site assessment under CERCLA (NFRAP-No Further Remedial Action Planned)

| | 1b. Site may qualify for further action, but is deferred to: | | RCRA | | NRC

| | **2. Further Assessment Needed Under CERCLA:** 2a. (optional) Priority: | | Higher | | Lower

2b. Activity Type: | | PA | | SI | | ESI | | HRS evaluation

| | Other: _____

DISCUSSION/RATIONALE: LOCATED AT 1311 NE 7TH AVE.; FORMER MANUFACTURER OF LATEX BASED PAINTS FROM 1978 - 1984. A STATE SI WAS CONDUCTED IN 1985. GW SAMPLES CONTAINED MERCURY AND CHROMIUM. ONLY MERCURY WAS ABOVE MCL AT 6.7 PPB. PCB-1260, LEAD, MERCURY AND CHROMIUM WERE FOUND IN SURFICIAL SOILS. APPROX 500 SQ.FT OF SOILS. THE NEAREST WELL IS 3.5 MILES. IN THE PAST SEVERAL OTHER INDUSTRIES WERE LOCATED AT THIS LOCATION:BANNER ELECTRIC OF MIAMI AND AN ENGINE STEAM CLEANING OPERATION. A WINDSHIELD RECON WAS CONDUCTED 5/14/95. AT THE KNOWN ADDRESS ONLY A ROLLOFF CONTAINERS AND AN EMPTY PARKING LOT WAS FOUND. A BAR/LIQUOR STORE IS ADJACENT. APT. ARE ALSO NEARBY.

NO FURTHER ACTION IS RECOMMENDED.

Report Reviewed and Approved by: Deborah A.Vaughn-Wright **Signature:** D. Vaughn-Wright **Date:** 6/20/95

Site Decision Made by: Deborah Vaughn-Wright **Signature:** D. Vaughn-Wright **Date:** 8/4/95

EPA Form # 9100-3

Acrylux Paint Manufacturing Company
Fort Lauderdale, Broward County, Florida
EPA ID No. FLD050430701
WasteLAN No. 00656

Black & Veatch Waste Science, Inc., (Black & Veatch) was tasked by the U.S. Environmental Protection Agency (EPA) to perform a Specialized Site Inspection Prioritization study for Acrylux Paint Manufacturing Company in Fort Lauderdale, Florida. This specialized study will focus on waste quantity size and identify sources contributing to groundwater contamination in Broward County, Florida.

Acrylux Paint Manufacturing Company is located at 1311 N. E. 7th Avenue, Fort Lauderdale, Broward County, Florida, more specifically, 026°08'23" N. latitude and 80° 08'12" W. longitude.

Acrylux Manufacturing Company manufactured latex based paints at this location from 1978 to 1984. From 1978 to 1980, water from this process was reportedly pumped out into a grease trap where solids were allowed to settle out; wastewater was then routed to a drainfield. There were reports from Broward County Environmental Quality Control Board that waste from a settling tank, very possibly the grease trap, were periodically pumped to a nearby surface swale area. The solids collected in the grease trap were reportedly pumped out and disposed of off site. In January of 1979, the grease trap was taken out of service and use of the drainfield was discontinued in 1980. Between 1980 and 1984 the facility was connected to the sewer system. During this time Acrulux reportedly recycled their rinsewater and continued to have sludge collected from a settling tank and disposed of at an unknown off site location. Paint spills were observed onsite, however no violations have been recorded

- June 1986, E.C. Jordan Co. conducted a Site Inspection. Environmental samples collected include a composite surface soil sample and groundwater samples.

Analysis of the surface soil samples detected the inorganic contaminants lead, chromium, and mercury in the source. One polychlorinated biphenyl compound was found in the onsite sample, PCB-1260. Analysis of groundwater samples detected the inorganic constituents chromium and mercury. No organic analytes were detected in

groundwater samples. There is history of use of phenylmercuric acetate by Acrylux in the paint manufacturing process, suggesting Acrylux is the source of mercury and possibly chromium contamination in the groundwater.

BROWARD COUNTY
TABLE OF SOURCE AND GROUNDWATER CONTAMINANTS

Site Name	Topographic Quadrangle map	Depth of well	Well Type	Filtered (Y or N)	Groundwater Contaminants	Concentrations	Sources/Size	Source Contaminants	Concentrations
Acrylux Paint Manufacturing Company	North Ft. Lauderdale	8.9- 9.1 ft. bls	T	N	chromium	1.2 µg/L	Contaminated Soil/500 ft.^{2}	chromium	0.014 mg/kg
					mercury	6.7 µg/L		lead	0.022 mg/kg
								mercury	1.0 mg/kg
								PCB-1260	370 µg/kg

T Temporary Well
M Monitoring Well
PM Potable Municipal Well
PP Potable Private Well
J Estimated Value
Shaded areas denote values attributable to the source.

NUS CORPORATION
1927 LAKESIDE PARKWAY
SUITE 614
TUCKER, GEORGIA 30084
404-938-7710

C-586-8-0-7

August 7, 1990

Mr. A.R. Hanke
Waste Programs Branch
Waste Management Division
Environmental Protection Agency
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Date: A[illegible]
Site Disposition: NPL
EPA Project Manager: [illegible]

Subject: Screening Site Inspection, Phase I
Acrylux Paint Company
Ft. Lauderdale, Broward County, Florida
EPA ID No. FLD981029572
TDD No. F4-9002-20

Dear Mr. Hanke:

FIT 4 conducted a Phase I Screening Site Inspection of Acrylux Paint Company in Ft. Lauderdale, Broward County, Florida. This included a review of EPA and state file material, completion of a target survey, and a drive-by reconnaissance of the facility on April 23, 1990.

The Acrylux Paint Company manufactures water-soluble, white, acrylic paints. This facility is located in an industrial/commercial area, 0.5 mile east of the Ft. Lauderdale Executive Airport, at 6010 Powerline Avenue, Fort Lauderdale, Florida. Acrylux has been at this location since March 1984. Previously, its location was at 1131 N.E. 7th Avenue, Ft. Lauderdale (Ref. 1).

Wastes generated during the manufacturing process include 1 gallon of spent solvents per year and 1 gallon of oils and resins per year. These wastes are stored in approximately 6 to 10 drums which are temporarily stored in a building at the facility, until they are shipped off the facility property. The rinsewater, which is used to clean out the storage tanks, is reused. A dust collector is used to control the air quality during the pouring of powdered paints (Ref. 1).

This area is in the Atlantic Coastal Ridge region of the Coastal Plain Physiographic Province (Ref. 2, plate-C). The area is a low, almost level plain with low ridges near the eastern shore. There are very few natural streams but rather a network of canals which provide drainage. The average elevation for Broward County is 2 to 10 feet above mean sea level. Surface soils primarily consist of fine sands (Ref. 3, pp. 1, 44, 45). Broward County is underlain by the Biscayne aquifer which is a sole source aquifer (Refs. 4, p. 3; 5). The climate is subtropical and humid with an average temperature of 75.4°F and a net annual rainfall of 13 inches (Refs. 3, pp. 1, 42; 6, pp. 43, 63). The 1-year, 24-hour rainfall is 4.5 inches (Ref. 7, p. 93).

The Biscayne aquifer is a highly permeable, wedge-shaped unconfined aquifer that is about 300 feet thick in eastern Broward County and thins to the west. The Biscayne aquifer underlying the facility consists of the Pamlico Sand (quartz sand), the Anastasia Formation (sandstone and limestone), the

Key Largo Limestone (coralline reef rock), and the Tamiami Formation (limestones, sands, and marls) (Ref. 8, sheets 1, 2). The geologic formations present in the Executive Airport area are somewhat variable in thickness, and the stratigraphic sequence may vary. Recharge to the Biscayne aquifer is primarily through downward infiltration of rainfall. Infiltration of the rainwater is rapid due to the highly permeable sandy soils along the coast, as well as the presence of the solution cavities and conduits in the limestone. In southern Florida, at least one-fourth of the limestone rock is cavernous with interconnecting solution cavities, generally filled with sand (Ref. 9, p. 133). The water table slopes eastward toward the coast; however, locally, the direction of flow may be influenced by drainage canals and wellfields (Refs. 4, pp. 3, 15; 8, sheets 1, 2). Water-table depth around the Acrylux facility ranges from 1 to 9 feet below land surface (bls) (Ref. 10, pp. 30, 31).

Wells completed in the aquifer are an average of 80 to 120 feet bls and provide all the municipal water supplies for Broward County (Ref. 5). Transmissivity of the Biscayne aquifer ranges from 5.4×10^4 to 4.0×10^5 ft^2/day, and the storativities are as high as 0.34 (Ref. 4, pp. 3, 8). Permeability ranges from 5×10^4 to 7×10^4 $gal/day/ft^2$ (Ref. 10. p. 39). The hydraulic conductivity of the Biscayne aquifer ranges from 1 to 1×10^{-3} cm/sec (Ref. 11. p. 29).

Below the aquifer of concern is the Hawthorn Group, a confining unit consisting of sand and clay. It separates the Biscayne aquifer from the Floridian aquifer and is about 300 feet thick. The Floridan Aquifer System is a sequence of carbonate rock of generally high permeability that are hydraulically connected in varying degrees. It consists of an upper and lower aquifer with a middle confining unit. The aquifer is about 1,500 feet thick in this area and is unused as a drinking water source due to its high salinity (Refs. 12, pp. 4, 5; 13, pp. A7, A8).

There were no storm drains noted on or near the Acrylux property during the aforementioned drive-by reconnaissance. Due to the high permeability of the soil, surface water at the Acrylux facility would percolate down into the groundwater via the grassy and weeded areas at and near the Acrylux property (Ref. 14). The facility building has been constructed to prevent stormwater intrusion (Ref. 15).

There are six municipal drinking water supply wellfields within a 4-mile radius of the facility. The nearest of these is the Broward County Utilities District (BCUD) Wellfield 1-B, located 0.75 mile northwest of the facility. The population served by this system is 3,397. Other wellfields within a 3-mile radius of the facility are the Ft. Lauderdale Prospect Wellfield, which serves a population of 63,200, and Pompano Beach's two wellfields which mix their water together before serving a population of 16,900. Between the 3- and 4-mile radius are the BCUD Wellfield 1-A, which serves a population of 10,843, and the Broadview Wellfield which serves a population of 5,300 (Refs. 5, 16).

The Acrylux facility is not fenced although access to the facility operations and storage areas is not possible as everything is contained within the secured building. The nearest school is North Andrews Elementary located about 0.6 mile to the east-southeast of Acrylux (Ref. 14).

Several endangered and threatened species may be found within 4 miles of the Acrylux facility. The federally threatened eastern indigo snake (Drymarchon corias couperi) is found in the Fern Forest Nature Center, located 2 miles west-northwest of the facility. The state-designated endangered hand adder's tongue fern (Ophioglossum palmatum) is also found in the Fern Forest Nature Center. The bird's nest spleenwort (Asplenium seratum) and the star-scale fern (Pleopeltis revoluta), both state-designated endangered species may also be found in the area (Refs. 17, 18, 19).

Based on the above referenced information, FIT 4 recommends that no further action be planned for Acrylux Paint Company. Should you have any questions, please contact me at NUS Corporation.

Very truly yours,

Bob Tolford
Project Manager

Approved:

BT/gwn

Enclosures

cc: John McKeown

REFERENCES

1. Preliminary Assessment and Potential Hazardous Waste Site Preliminary Assessment (EPA Form2070-12) and attached cover sheet for Acrylux Paint Company. Filed by Willard Murray, E.C. Jordan Co., August 8, 1985.

2. William A. White, The Geomorphology of the Florida Peninsula, Geological Bulletin No. 51 (Tallahassee, Florida: Bureau of Geology, 1970).

3. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Broward County, Florida (July 1976).

4. H. Klein and J.E. Hull, Biscayne Aquifer, Southeast Florida, Water Resources Investigations 78-107 (U.S. Geological Survey, 1978).

5. W. Smitherman, NUS Corporation, internal correspondence to K.D.Pass, March 22, 1990. Subject: Municipal water systems for Broward County, Florida.

6. U.S. Department of Commerce, Climatic Atlas of the United States (Washington D.C.: GPO, June 1968) Reprint: 1983, National Oceanic and Atmospheric Administration.

7. U.S. Department of Commerce, Rainfall Frequency Atlas of the United States, Technical Paper No. 40 (Washington D.C.: GPO, 1961).

8. Carmen R. Causaras, Geology of The Surficial Aquifer System, Broward County, Florida, Water Resources Investigations Report 84-4068 (U.S. Geological Survey, 1985).

9. Garald G. Parker et al., Water Resources of Southeastern Florida, Water-Supply Paper No. 1255 (U.S. Geological Survey, 1955).

10. Melvin C. Schroeder, Howard Klein, and Nevin D. Hoy, Biscayne Aquifer of Dade and Broward Counties, Report of Investigations No. 17 (U.S. Geological Survey, 1958).

11. R.A. Freeze and J.A. Cherry, Groundwater (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1979).

12. Fredrick W. Meyer, Evaluation of Hydraulic Characteristics of a Deep Artesian Aquifer from Natural Water-Level Fluctuations, Miami, Florida, Report of Investigations No.75 (U.S. Geological Survey, 1974).

13. Richard H. Johnston and Peter W. Bush, Summary of the Hydrology of the Floridan Aquifer System in Florida and in Parts of Georgia, South Carolina, and Alabama, Professional Paper 1403-A (U.S. Geological Survey, 1988).

14. NUS Corporation, Field Logbook No. F4-2193 for Acrylux Paint Manufacturing Company, TDD No. F4-9002-20. Documentation of facility reconnaissance, April 23, 1990.

15. Broward County Environmental Quality Control Board, Hazardous Material Facility License for Acrylux Paint Manufacturing Company, Incorporated, September 27, 1988.

16. United States Geological Survey 7.5 minute seriesTopographic Quadrangle Maps of Florida: Fort Lauderdale North 1962 (Photorevised 1983), West Dixie Bend 1962 (PR 1983), Pompano Beach 1962 (PR 1983), Boca Raton 1962 (PR 1983), scale 1:24,000.

17. Don A. Wood Florida Fresh Water And Game Commission, Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida, July 1, 1988.

18. William Vasser, NUS Corporation, telephone conversation with Paddy Cunningham of the Fern Forest Nature Center, May 3, 1990. Subject: Endangered and threatened species.

19. Daniel B Ward, "Rare and Endangered Biota of Florida," Volume Five, Plants (Gainesville, Florida: University Presses of Florida, 1978).

HAZARD RANKING SYSTEM SCORING SUMMARY

FOR

ACRYLUX PAINT COMPANY
EPA SITE NUMBER FLD981029572
FORT LAUDERDALE
BROWARD COUNTY, FL
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY BOB TOLFORD
OF NUS CORPORATION
ON 07/03/90

DATE OF THIS REPORT: 08/01/90
DATE OF LAST MODIFICATION: 08/01/90

GROUND WATER ROUTE SCORE	:	29.93
SURFACE WATER ROUTE SCORE	:	0.00
AIR ROUTE SCORE	:	0.00
MIGRATION SCORE	:	17.30

HRS GROUND WATER ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. ROUTE CHARACTERISTICS			
DEPTH TO WATER TABLE	5 FEET		
DEPTH TO BOTTOM OF WASTE	0 FEET		
DEPTH TO AQUIFER OF CONCERN	5 FEET	0	0
PRECIPITATION	63.0 INCHES		
EVAPORATION	50.0 INCHES		
NET PRECIPITATION	13.0 INCHES	2	2
PERMEABILITY	1.0X10-3 CM/SEC	2	2
PHYSICAL STATE		3	3
TOTAL ROUTE CHARACTERISTICS SCORE:			13
3. CONTAINMENT		3	3
4. WASTE CHARACTERISTICS			
TOXICITY/PERSISTENCE:ETHYLENE GLYCOL			9
WASTE QUANTITY CUBIC YDS	0		
DRUMS	10		
GALLONS	0		
TONS	0		
TOTAL	3 CU. YDS	1	1
TOTAL WASTE CHARACTERISTICS SCORE:			10
5. TARGETS			
GROUND WATER USE		3	9
DISTANCE TO NEAREST WELL	3800 FEET		
AND	MATRIX VALUE	35	35
TOTAL POPULATION SERVED	83500 PERSONS		
NUMBER OF HOUSES	0		
NUMBER OF PERSONS	83500		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		
TOTAL TARGETS SCORE:			44

GROUND WATER ROUTE SCORE (Sgw) = 29.93

HRS SURFACE WATER ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	ROUTE NOT SCORED		N/A
2. ROUTE CHARACTERISTICS			
SITE LOCATED IN SURFACE WATER			
SITE WITHIN CLOSED BASIN			
FACILITY SLOPE			
INTERVENING SLOPE			
24 HOUR RAINFALL			
DISTANCE TO DOWN-SLOPE WATER			
PHYSICAL STATE			
TOTAL ROUTE CHARACTERISTICS SCORE:			N/A
3. CONTAINMENT			N/A
4. WASTE CHARACTERISTICS			
TOXICITY/PERSISTENCE:			
WASTE QUANTITY CUBIC YDS			
DRUMS			
GALLONS			
TONS			
TOTAL			
TOTAL WASTE CHARACTERISTICS SCORE:			N/A
5. TARGETS			
SURFACE WATER USE			
DISTANCE TO SENSITIVE ENVIRONMENT			
COASTAL WETLANDS			
FRESH-WATER WETLANDS			
CRITICAL HABITAT			
DISTANCE TO STATIC WATER			
DISTANCE TO WATER SUPPLY INTAKE			
AND	MATRIX VALUE		
TOTAL POPULATION SERVED			
NUMBER OF HOUSES			
NUMBER OF PERSONS			
NUMBER OF CONNECTIONS			
NUMBER OF IRRIGATED ACRES			
TOTAL TARGETS SCORE:			N/A

SURFACE WATER ROUTE SCORE (Ssw) = 0.00

HRS AIR ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NC	0	0

2. WASTE CHARACTERISTICS

REACTIVITY: MATRIX VALUE

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS
DRUMS
GALLONS
TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE: N/A

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS
0 to 0.25 mile
0 to 0.50 mile
0 to 1.0 mile
0 to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS
COASTAL WETLANDS
FRESH-WATER WETLANDS
CRITICAL HABITAT

DISTANCE TO LAND USES
COMMERCIAL/INDUSTRIAL
PARK/FOREST/RESIDENTIAL
AGRICULTURAL LAND
PRIME FARMLAND
HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE: N/A

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS
FOR
SITE: ACRYLUX PAINT COMPANY
AS OF 08/01/90

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS		13
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	10
TARGETS	X	44

= 17160 /57,330 X 100 = 29.93 = S_{gw}

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS		0
CONTAINMENT	X	1
WASTE CHARACTERISTICS	X	0
TARGETS	X	0

= 0 /64,350 X 100 = 0.00 = S_{sw}

AIR ROUTE SCORE

OBSERVED RELEASE 0 /35,100 X 100 = 0.00 = S_{air}

SUMMARY OF MIGRATION SCORE CALCULATIONS

	S	S^2
GROUND WATER ROUTE SCORE (S_{gw})	29.93	895.80
SURFACE WATER ROUTE SCORE (S_{sw})	0.00	0.00
AIR ROUTE SCORE (S_{air})	0.00	0.00
$S^2_{gw} + S^2_{sw} + S^2_{air}$		895.80
$\sqrt{(S^2_{gw} + S^2_{sw} + S^2_{air})}$		29.93
$S_M = \sqrt{(S^2_{gw} + S^2_{sw} + S^2_{air})}/1.73$		17.30

REF.1

ACRYLUX PAINT CO.
FLD 981029572
PRELIMINARY ASSESSMENT

A. SITE DESCRIPTION. The Acrylux Paint Mfg. Co. manufactures white, water soluble acrylic paints. The facility is located in an industrial/commercial area, 1/2 mile east of the Ft. Lauderdale Airport, at 6010 Powerline Avenue, Broward County, Ft. Lauderdale, Florida. Acrylux moved to this location in March, 1984 from its previous location at 1131 NE 7th Avenue, Ft. Lauderdale.

B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. Spent solvents, waste oils and greases used to manufacture, mix and package acrylic white paint are handled and stored in 6-10 drums which are stored in an on-site building. All of the spent solvents and oily wastes are shipped off-site, and the rinsewater which is used to clean the paint storage tanks is reused. A dust collector is used to control air quality while powdered paints are being poured. There have been no violations at this location and site inspections have noted the good housekeeping practices used; however, no sampling has been conducted.

C. NATURE OF HAZARDOUS MATERIALS. The paint solvents and oily wastes generated at the site are toxic, corrosive, volatile, highly reactive and potentially explosive if exposed to heat.

D. ROUTES OF CONTAMINATION. Possible routes of contamination include surface water, air, drinking water, groundwater used for irrigation and direct contact.

E. POSSIBLE AFFECTED POPULATION AND RESOURCES. Area residents are provided with drinking water from the Ft. Lauderdale Executive/Prospect municipal wellfield. The wellfield draws from the Biscayne Aquifer which is a shallow, unconfined, sole-source aquifer.

The site is located less than 1/4 mile east of the wellfield. Contamination of the aquifer and wellfield is possible, but not probable, as no discharges or spills have been recorded. The site is also located 1000 feet northeast of a lake and within 1 1/2 miles of a feeder canal. Potentially contaminated groundwater or surface runoff could contaminate surface water supplies, impacting recreational users and aquatic flora and fauna.

Workers and the general public may come in direct contact with the wastes, since the site is not fenced and access is not restricted. Workers may also be injured in the event of an explosion or fire.

F. RECOMMENDATIONS AND JUSTIFICATIONS. Hazardous wastes are properly contained on-site and disposed off-site. BCEQCB site inspections document the good housekeeping practices at this site since it began in March, 1984. A low priority for inspection is therefore recommended for this site.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

EPA

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D 981029572

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Acrylux Paint Manufacturing Co.	6010 Powerline Avenue (located at 1131 NE 7th Ave - until 3/84)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Ft. Lauderdale	FL	33309	Broward	011	17

09 COORDINATES: LATITUDE 26 12 00.0 | LONGITUDE 080 09 08.0

10 DIRECTIONS TO SITE (Starting from nearest public road): Proceed north through Ft. Lauderdale on Interstate 95. Exit from I-95 onto Route 870, heading west. Go 30 yards after the turnoff, then turn right onto Powerline Road and proceed 3/4 of a mile to NW 61st Street. The facility is located on the southeast corner of Powerline Road and NW 61st Street.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
Acrylux Paint Manufacturing Co.	6010 Powerline Avenue

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Ft. Lauderdale	FL	33309	(305) 772-0300

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
Ms. Kay Lutchko - Manager	same

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
same			(305) 772-0300

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3001 DATE RECEIVED: 12 / 19 / 80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 10 / 31 / 84 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: Broward County Environmental Quality Control Board (BCEQCB) (Specify)

See Attachment "A"

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
March 1984 (BEGINNING YEAR) | present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Paints, solvents and resins used in the paint manufacturing process are stored on-site in drums and disposed of by an authorized waste company.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
All hazardous materials are shipped off-site, and the rinsewater used to clean the paint storage tanks is re-used. A dust collector is used while powdered paints are being poured.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Eric Muzie	FDER	(904) 488-0190

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Willard Murray	N/A	E.C. Jordan Co.	(207) 775-5401	08 / 08 / 85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

LWE

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE: FL | 02 SITE NUMBER: D981029572

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☒ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: 6-10

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☒ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☒ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			The waste generated at the site includes 1 gallon/year spent solvents and 1 gallon/year oils and resins.
OLW	OILY WASTE	unknown		
SOL	SOLVENTS	unknown		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Propylene glycol	999	DR		
SOL	Ethylene glycol	107-21-1	DR		
OLW	Acrylic resins	8050-09-7	DR		
SOL	Xylene (xylol)	1330-20-7	DR		
SOL	Titanium dioxide	13463-67-7	DR		
SOL	Ammonia	7664-41-7	DR		
OLW	Pine oil	8002-09-3	DR		
IOC	Amorphous silica	7631-86-9	DR		
BAS	Calcium carbonate	1317-65-3	DR		
SOL	Triton	9002-93-1	DR		

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling analyses, reports)

Broward County EQCB Facility Inspection Reports: 06/80, 02/15/85
Broward County EQCB Survey February 8, 1985

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D981029572

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ | 04 NARRATIVE DESCRIPTION

Possible spills or leaks of hazardous materials from the storage drums may contaminate the groundwater. All hazardous substances, however, are stored in drums and wastes are shipped off-site for disposal. No spills or discharges at this site have been reported. No groundwater samples have been taken.

01 ☒ B. SURFACE WATER CONTAMINATION | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ | 04 NARRATIVE DESCRIPTION

The facility is located 1000 feet northeast of a small (1000 ft. by 500 ft.) quarry lake, and 1 1/2 miles from a feeder canal. Potential spills or leaks onto the ground surface could contaminate surface water. No discharges or spills have occurred, however. No surface water samples have been taken.

01 ☐ C. CONTAMINATION OF AIR | 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 | 04 NARRATIVE DESCRIPTION

Remote potential. A dust collector is used to control air quality while powdered paints are being poured.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ | 04 NARRATIVE DESCRIPTION

Some of the substances stored on-site pose a low to medium fire hazard and are potentially explosive if exposed to heat. Good housekeeping practices, however, have prevented any accidents.

01 ☒ E. DIRECT CONTACT | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 3001-10,000 | 04 NARRATIVE DESCRIPTION

There is a small chance that the workers and general public could be exposed to the hazardous wastes by direct contact, since access to the site is not restricted. The hazardous materials on-site are toxic, corrosive, highly volatile and potentially explosive.

01 ☒ F. CONTAMINATION OF SOIL | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: <0.5 (Acres) | 04 NARRATIVE DESCRIPTION

Potential spills or leaks of solvents and oily wastes could contaminate the soil. No spills or discharges, however, have been reported. No soil samples have been collected.

01 ☒ G. DRINKING WATER CONTAMINATION | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ | 04 NARRATIVE DESCRIPTION

Area residents are provided with drinking water from the Ft. Lauderdale Executive/ Prospect municipal wellfield which produces from the shallow and permeable Biscayne Aquifer. The site is located less than 1/4 mile east of the wellfield. Potential spills or leaks on-site could contaminate the wellfield. No spills or discharges have been reported, however.

01 ☒ H. WORKER EXPOSURE/INJURY | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 1-100 | 04 NARRATIVE DESCRIPTION

Workers handling the hazardous substances may be exposed to toxic fumes and skin irritants. Workers may also be injured in the event of on-site fires or explosions. No fires or explosions have been reported.

01 ☒ I. POPULATION EXPOSURE/INJURY | 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ | 04 NARRATIVE DESCRIPTION

Acrylux Paint is located in an industrial/commercial area and is not fenced, guarded or posted to restrict access. Area residents may be exposed to hazardous substances via potentially contaminated drinking water, groundwater used for irrigation or surface water.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D981029572

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Contact with contaminants may damage plant life. There was no observed damage to the grass or small plants on-site, and no spills or discharges have been reported.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)

Contact with contaminants may damage wildlife. No spills or discharges have been reported, however.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Remote potential. No spills or discharges have been reported, and the solvents and oily wastes present at the site do not generally bioaccumulate.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking containers) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None reported.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Acrylux Paint was located at 1131 NE 7th Avenue, Ft. Lauderdale, until March, 1984. At their previous location they discharged contaminated rinsewater into a drainfield.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10,000+

IV. COMMENTS

A windshield survey conducted July 31, 1985 noted that the grounds and building were well maintained, and the facility used good housekeeping practices.

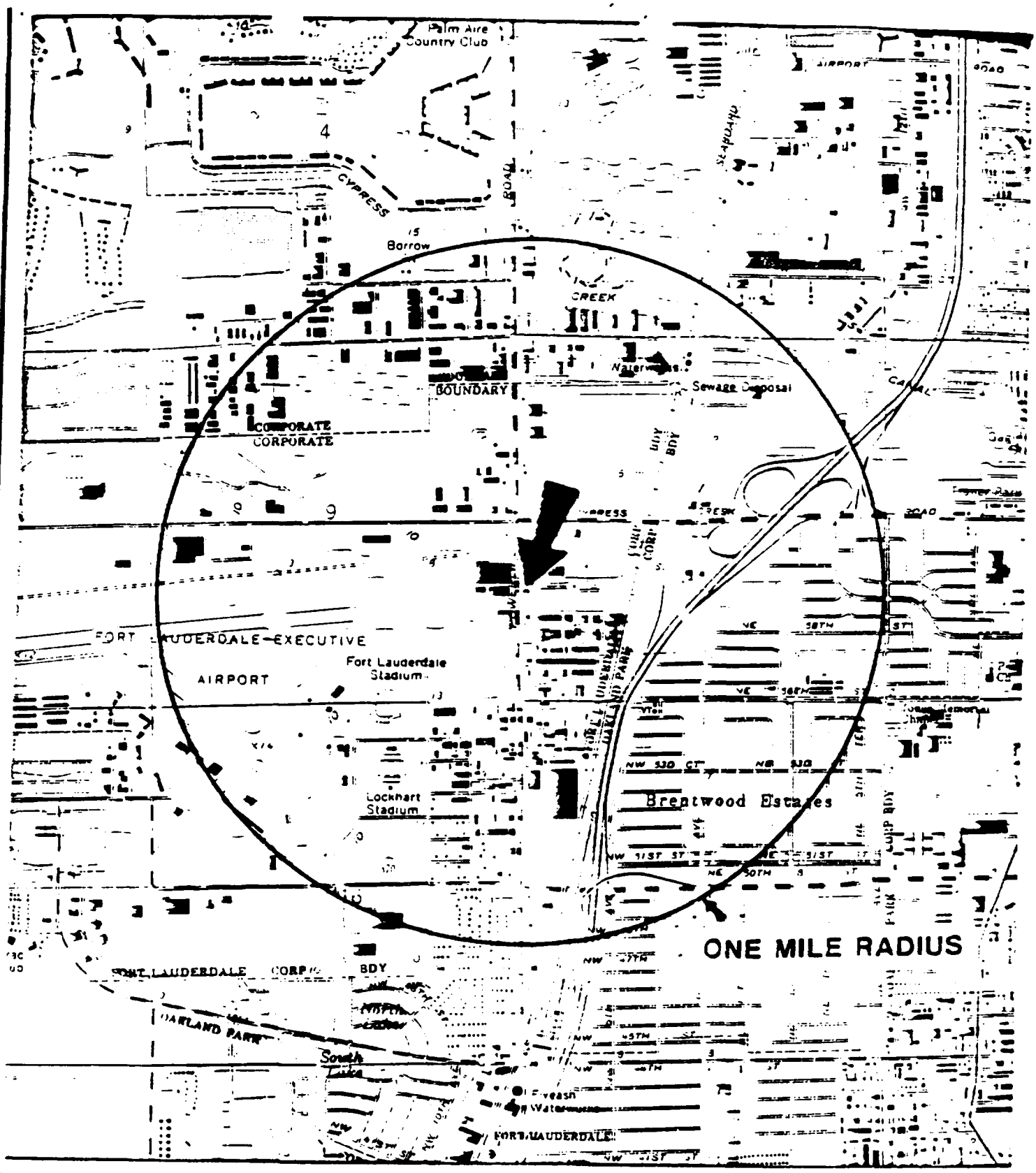
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See attached reference list.

EPA FORM 2070-12 (7-81)

ATTACHMENT A
ACRYLUX PAINT MFG. CO.
FLD
ON-SITE INSPECTIONS

DATE	AGENCY	SAMPLES	COMMENTS
7/31/85	E.C. Jordan Co. for FDER	No	Windshield survey (off-site inspection): Inspectors noted that the grounds and buildings were well maintained and the facility had good housekeeping.
2/8/85	BCEQCB	No	Inspectors noted proper disposal methods.
10/31/84	BCEQCB	No	No problems noted.
8/15/85	BCEQCB	No	No problems noted.



SCALE 1 : 24000

1/2 1 MILE

2000 0 1000 2000 FEET

N

SITE LOCATION MAP

Acrylux Paint Mfg. Co.

6010 Powerline Avenue

USGS QUAD Ft. Lauderdale North

DATE 1983

ECCORDANCE

REFERENCE LIST

1. Environmental Protection Agnecy, Federal Register, National Oil and Hazardous Substances Contingency Plan, Part V, July 16, 1982.

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9. Health and Safety Plan, Florida 3012 Program, E.C. Jordan Co., June 1984.

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11. NUS Project for Performance of Remedial Response Activities at Uncontrolled Hazardous Substance Facilities--Zone 1. NUS Corporation, Superfund Division.

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14. TLVs Threshold Limit Values for Chemical Substances in the Work Environment Adopted by ACGIH for 1983-84, American Conference of Governmental Industrial Hygienists, ISBN: 0-936712-45-7, 1983.

15. U.S. Geological Survey, Topographic Map, 1-24,000 Series.

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Reference No. 2

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

BUREAU OF GEOLOGY
Robert O. Vernon, Chief

GEOLOGICAL BULLETIN NO. 51

THE GEOMORPHOLOGY OF THE FLORIDA PENINSULA

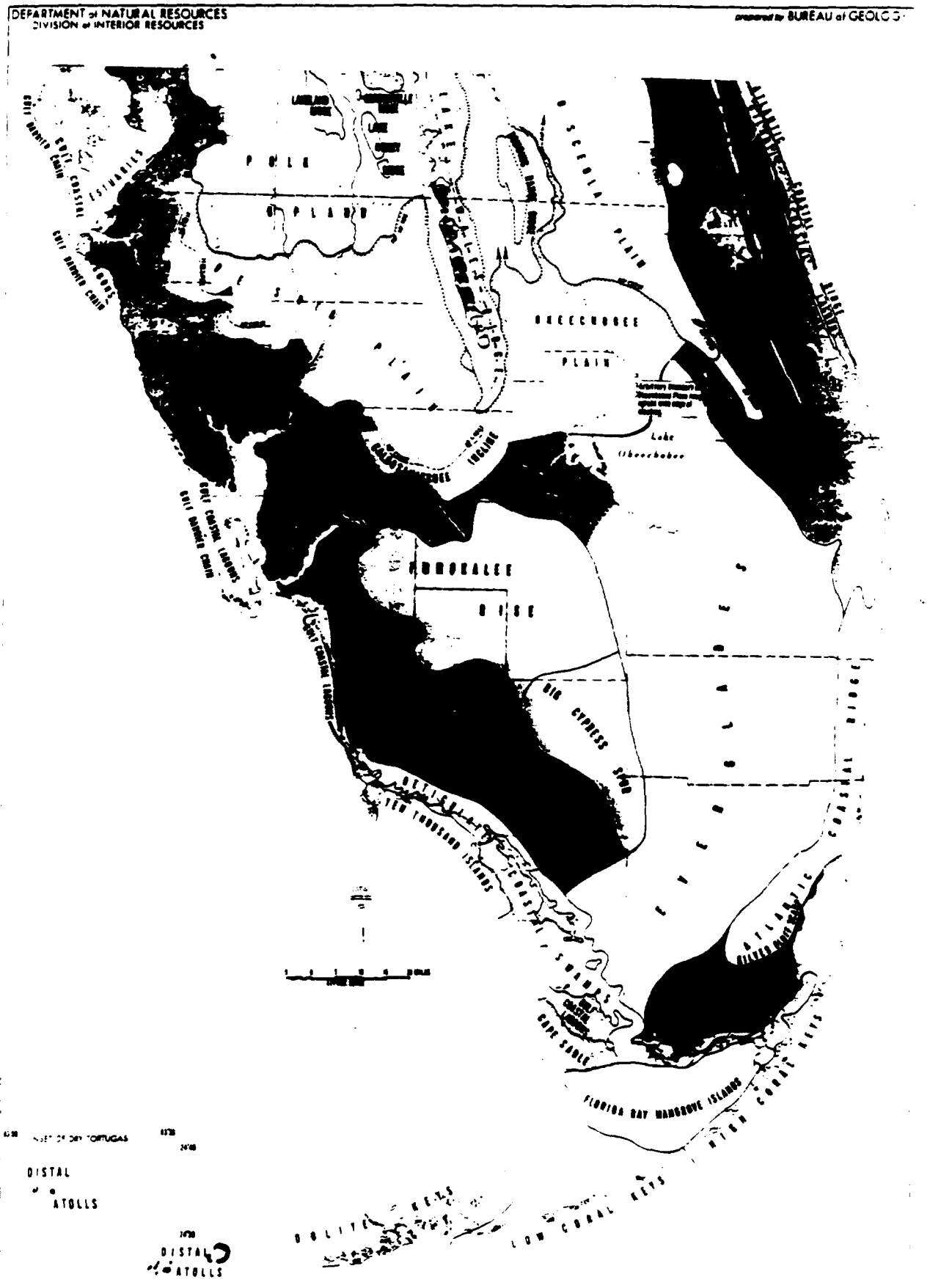
By
William A. White

Published for
BUREAU OF GEOLOGY
DIVISION OF INTERIOR RESOURCES
FLORIDA DEPARTMENT OF NATURAL RESOURCES

Tallahassee, Florida
1970

CONTENTS

Figure



I-C PHYSIOGRAPHIC MAP OF SOUTH PENINSULA FLORIDA

Reference No. 3

SOIL SURVEY OF

Broward County Area, Florida

United States Department of Agriculture
Soil Conservation Service

In cooperation with

University of Florida
Institute of Food and Agricultural Sciences
Agricultural Experiment Stations
Soil Science Department

Contents

Issued July 1976

SOIL SURVEY OF BROWARD COUNTY AREA, FLORIDA

BY ROBERT F. PENDLETON, HERSHEL D. DOLLAR, AND LLOYD LAW, JR.,
SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH UNIVERSITY OF FLORIDA, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, AGRICULTURAL EXPERIMENT STATIONS, SOIL SCIENCE DEPARTMENT

BROWARD COUNTY AREA is in Broward County and the southeastern part of Florida (fig. 1). It

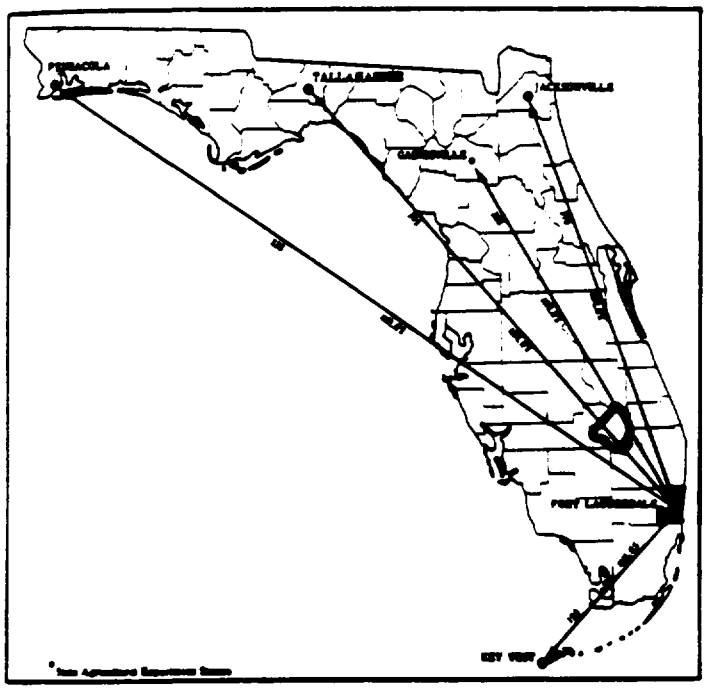


Figure 1.—Location of Broward County Area in Florida.

has a total land area of 189,273 acres or about 296 square miles. Fort Lauderdale is the county seat of Broward County. The survey area is bounded by Dade County on the south, a conservation area on the west, Palm Beach County on the north, and an area defined along Range line 42–43E to Atlantic Boulevard, west on Atlantic Boulevard to Powerline Road, south on Powerline Road to Oakland Park Boulevard, west on Oakland Park Boulevard to Sunshine Parkway, and south on the Sunshine Parkway to the Dade County line.

Most of the survey area is low, nearly level land at an elevation of 2 to 10 feet above sea level. Two sand ridges are in the area. One is a coastal ridge that extends from Palm Beach County and ends south of Pompano. The other is known as Pine Island and is west of Davie and north of Cooper City. This ridge consists of only about 400 acres but is at the highest elevation, 29 feet, in the Area. The average temperature is 75.4° F. Rainfall is abundant, but is unevenly distributed.

The county had a population of 620,000 people in 1970.[1] Almost all of the people live east of the conservation area.

Generally, farm activity has diminished, but some citrus crops, winter truck crops, and cattle are produced.

The Area is very popular with tourists and retired persons because of the warm climate in winter and the various available recreational facilities.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in the Broward County Area, where they are located, and how they can be used. The soil scientists went into the county knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or crops, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The *soil series* and the *soil phase* are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different textures in the surface

[1] This figure is taken from statistical data of the U.S. Department of Commerce, Bureau of the Census.

cation exchange capacity and then multiplying by 100.

Organic matter was determined by a modification of the Walkley-Black wet-combustion method as outlined in procedure 6A1a. Total nitrogen was obtained by the semi-micro Kjeldahl method as shown in procedure 6B2a. Resistivity (ohm cm) or an "R" value was obtained using a Model 100 Corrosion Tester. The corrosion potential or a "C" value that was obtained from the manufacturer's tables is directly related to the "R" value. The smaller the "C" value, the less the corrosion and the greater the expectancy of pipe life. Generally, C values range from 1 to 10, and pipe life ranges accordingly from 20 to 2 years.

Bulk density, hydraulic conductivity (saturated), and water retention at 0.10 and 0.33 bar were measured on 3 by 5.4 centimeter cylindrical (undisturbed) soil cores. Water retention at 15-bar suction was determined on disturbed or loose soil samples by procedure 4B2.

Water retention difference was calculated using the formula

$$\text{WRD (in in)} = \frac{\frac{1}{3} - (\text{or } \frac{1}{10}) \text{ bar } \% - 15 - \text{bar } \%}{100} \times \text{bulk density, moist,}$$

$\frac{1}{10}$ bar was used for sandy soils and $\frac{1}{3}$ bar for organic soils. Water retention difference is considered by many to closely approximate available water capacity.

Additional Facts About the Area

Soil is intimately associated with its environment. The interaction of all factors determines the overall behavior of a soil for a given use. This section discusses briefly the major factors of the environment other than those that affect the use and management of soils. The factors discussed are climate; transportation, markets, and farming; water supply and natural resources; and physiography and drainage.

Climate[10]

The climate of Broward County is characterized by long, warm, humid summers and mild winters. The moderating influence of the waters of the Atlantic on maximum temperatures in summer and minimum temperatures in winter is quite strong along the immediate coast but diminishes noticeably a few miles inland. The moderation of the coastal winter temperatures gives this section of the survey area a tropical climate (temperatures of coldest month higher than 64.4° F), while the rest is designated as humid subtropical.

Rainfall also has a much greater variation in an east-west direction than it has in a north-south direction. Precipitation occurs during all seasons but on the basis of mean monthly totals of precipitation, a rainy season of 5 months from June through October brings nearly 65 percent of the annual rainfall and a relatively dry season of 5 months from November through March produces only about 20 percent of the annual total. Average annual rainfall totals range from 60 inches along the coastal sections to nearly 64 inches a few miles inland, and then diminish to 50 inches along the western border of Broward County.

Most summer rainfall comes from showers and thunderstorms of short duration. They are sometimes heavy, with 2 or 3 inches of rain falling within a period of 1 to 2 hours. Day-long rains in summer are rare. When they occur, they are almost always associated with tropical storms. Winter and spring rains are not generally so intense as summer thundershowers. A 24-hour rainfall of almost 9 inches may be expected to occur sometime during the year in about 1 year in 10 on the average.

Hail falls occasionally in thunderstorms but the hailstones are generally small and seldom cause much damage. Fourteen tornadoes were reported in Broward County during the 12-year period 1959–71.

Temperature and precipitation data for the period 1962–71 are shown in table 17. The data recorded at the Fort Lauderdale Experiment Station are representative of weather conditions in the eastern section of Broward County, but away from the immediate influences of the Atlantic. Table 18 gives a comparison with other weather stations within Broward County. The Experiment Station is located 5 miles southwest of the Fort Lauderdale Post Office, while the Dixie Water Plant is within the city limits, 2 miles southwest of the Post Office. The Bahia Mar observations are taken at the Yacht Club on the ocean, 3 miles east of the Post Office. North New River Canal No. 2 is a weather station that collects rainfall data only. It is located on the northern border of the county, centered midway between its eastern and western boundaries.

Summer temperatures have few day-to-day variations, and temperatures as high as 98° F. are rare. In 45 years of record at the Dixie Water Plant, only one reading of 100° has been recorded. Twenty years of observation show a record high of 98° at the Experiment Station and 96° at Bahia Mar.

Winter minimum temperatures have considerable day-to-day variations due largely to periodic invasions of cold, dry air that has moved southward from Canada. At the Experiment Station, temperatures of 32° or below have been observed on only 11 days during the past 10 years. In 3 of the 10 years, no freezing temperatures have been observed. Data from stations run by the Federal-State Frost Warning Service show that in the 30-year period 1937–67, there were 25 nights on which the temperatures reached 32° or below the coast, and 75 nights inland along the western edge of Broward County. Calculations show that in the same period there were 100 hours with temperatures of 32° or below along the coast, increasing to 300 hours inland. The lowest temperature reported in the Fort Lauderdale area during the last 45 years was 28°. Table 19 gives the record of low temperatures at Davie, a Frost Warning Station located in the interior southeastern section of Broward County. This temperature record can be considered representative of the climate for truck farming in the eastern sections of the survey area.

[10] By JAMES T. BRADLEY, climatologist for Florida, National Weather Service, U.S. Department of Commerce. For convenience in presentation this section includes climate data for all of Broward County.

TABLE 19.—*Record of low temperatures*

[Period of

Temperature	Percent of seasons at or below various temperatures before—						
	November 20	December 10	December 30	January 19	February 18	March 10	March 30
°F							
36	0	23	57	87	100	100	100
32	0	13	33	57	77	83	83
28	0	0	7	17	33	33	33
26	0	0	7	7	17	17	17
24	0	0	0	0	3	3	3

Four airports are available for use—Fort Lauderdale-Hollywood International Airport, Fort Lauderdale Executive Airport, Pompano Beach Airport, and North Perry Airport. Only Fort Lauderdale International Airport has scheduled commercial airline flights. The other airports are mostly for private planes.

The largest state owned fresh-vegetable market in Florida is the Pompano State Farmers' Market. This market handles vegetables from the survey area and from the southern part of Palm Beach County. Most of the citrus is processed in other counties. More grapefruit is consumed than is produced in the county.

Not much farming was practiced in the Broward County Area before 1910. Drainage was established with the formation of the Napoleon B. Broward Drainage District. After drainage was established, citrus groves were planted between the New River and South New River Canals. Most of the winter vegetable crops were grown in the same area, but planting soon spread primarily to the north as the area was developed (*9*). According to the 1950 Census of Agriculture, approximately 700 farms and 45 dairies were in Broward County in 1950. By 1969, the number had decreased to 291 farms and 8 dairies. Farming in the Area generally is still on the decrease.

This is one of the few places in the United States that has either a tropical or humid subtropical climate. A large percentage of the soils are nearly level, poorly drained, and infertile. Another fairly large group of soils are organic and nearly level, very poorly drained, and relatively fertile. With drainage and proper fertilization, all of these soils produce excellent winter truck crops.

The coastal areas have excellent facilities for fishing and boating.

Water Supply and Natural Resources

The water supply for the cities in the Broward County Area comes primarily from municipal wells. Many private wells are used mostly for watering lawns. Because porous limestone is below most of the soils, water can move laterally for long distances. The water in the canals can be regulated to help recharge the ground water during dry periods.

Although most of the Area receives about 60 inches of rainfall annually, this amount may not be sufficient to provide water needs in the future. The main alternate source could be Lake Okeechobee to the north of the survey area.

Climate is considered one of the most important natural resources of the Area.

Physiography and Drainage

The Broward County Area can be divided into three general parts based on differences in physiography and soils.

The western part is a nearly level, generally treeless sawgrass plain that appears to be flat. The soils are organic and overlie limestone. In many places the soils are shallow. Under natural conditions, water stood on these soils for months and only during extremely dry seasons was the surface exposed. Today, these soils have been drained, and water stands on the surface for only short periods. With drainage, the organic soils are subject to oxidation and subsidence. When exposed to air, organic matter is oxidized or slowly burned up, and this gradual loss of organic matter results in subsidence or a lowering of surface elevation. Also, during dry seasons, wildfires have burned some of the organic surface soil, and decreased the thickness of the organic material.

Very little of the organic soils are presently farmed. A few acres are in improved pasture. In recent years, after some drainage, several types of trees have become established. These trees are melaleuca, Australian pine, and waxmyrtle. One method used for developing the organic soils for urban use removes the organic material and adds fill consisting of rock or sand.

The central part consists of nearly level, grassy areas interspersed with small ponds. The soils here are wet and sandy and are underlain by limestone. Before drainage, water stood on these soils for several months each year. The original vegetation was water-tolerant grasses and a few cypress stands. In the higher areas, pine and palmetto were common. These areas are now farmed, and with drainage produce excellent pasture and truck crops.

This is also an area of rapid urban development. The underlying limestone is mostly porous, and water moves through it laterally for long distances. Water-control ditches can be further apart in these soils than in soils underlain by sand or loamy material. For urban

at Davie in Broward County

record 1937–67]

Percent of seasons at or below various temperatures after—						
November 20	December 10	December 30	January 19	February 18	March 10	March 30
100	100	100	83	50	13	0
83	80	73	50	17	3	0
37	37	30	20	3	0	0
17	17	10	17	0	0	0
3	3	3	3	0	0	0

development, fill is commonly added to raise the elevation to such a level that water does not cover the soil surface.

The eastern part is made up of low, sandy ridges, a part of which is commonly referred to as flatwoods. The vegetation is mostly pine, palmetto, and native grasses. The flatwoods part is made up of deep, poorly drained, nearly level, sandy soils. These soils have been used mostly for truck crops and pasture, but are rapidly being developed for urban uses. They require drainage, and fill is added to low areas so that the entire acreage can be developed. The other part is made up of deep, excessively drained or well-drained, sandy soils, many of which, are developed for urban uses.

The major drainage systems in the Area flow from west to east and drain into the Atlantic Ocean. These systems are the Hillsboro Canal at the Palm Beach-Broward County line, the Pompano Canal at Margate, the Midriver Canal at Lauderhill, the North New River Canal at Davie, and C–9 at the Dade County line. These canals are under the control of the Central and Southern Florida Flood Central District.

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Glossary

Association, soil. A group of soils geographically associated in a characteristic repeating pattern.

Available water capacity (also termed available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Base saturation. The degree to which material that has base-exchange properties is saturated with exchangeable cations other than hydrogen, expressed as a percentage of the cation-exchange capacity.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Complex, soil. A mapping unit consisting of different kinds of soils that occur in such small individual areas or in such an intricate pattern that they cannot be shown separately on a publishable soil map.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

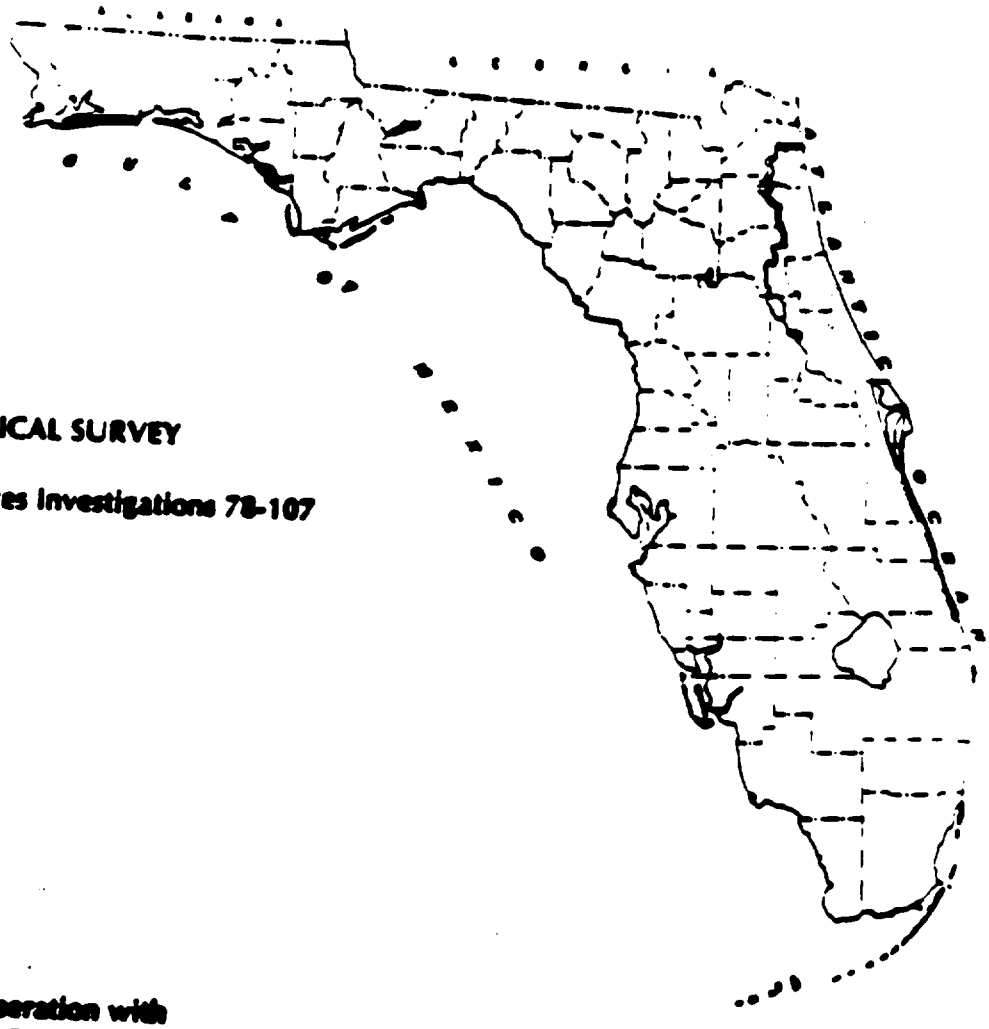
Cemented.—Hard and brittle; little affected by moistening.

Drainage class (natural). Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

REF. 4

WRI 78-107

BISCAYNE AQUIFER, SOUTHEAST FLORIDA



U.S. GEOLOGICAL SURVEY

Water-Resources Investigations 78-107

Prepared in cooperation with
U.S. ENVIRONMENTAL PROTECTION AGENCY

WRI 78-107 BISCAYNE AQUIFER, SOUTHEAST FLORIDA

BIBLIOGRAPHIC DATA SHEET	1. Report No.	2.	3. Recipient's Accession No.
4. Title and Subtitle BISCAYNE AQUIFER, SOUTHEAST FLORIDA			5. Report Date September 1978 6.
7. Author(s) H. Klein, J. E. Hull			8. Performing Organization Rept. No. USGS/WRI 78-107
9. Performing Organization Name and Address U.S. Geological Survey 7815 Coral Way, Suite 110 Miami, Florida 33155			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address U.S. Geological Survey, Water Resources Division 325 John Knox Road, Suite F-240 Tallahassee, Florida 32303			13. Type of Report & Period Covered 14.

15. Supplementary Notes

Prepared in cooperation with the U.S. Environmental Protection Agency

16. Abstract

Peak daily pumpage from the highly permeable, unconfined Biscayne aquifer for public water-supply systems in southeast Florida in 1975 was about 500 million gallons. Another 165 million gallons was withdrawn daily for irrigation. Recharge to the aquifer is primarily by local rainfall. Discharge is by evapotranspiration, canal drainage, coastal seepage, and pumping. Pollutants can enter the aquifer by direct infiltration from land surface or controlled canals, septic-tank and other drainfields, drainage wells, and solid-waste dumps. Most of the pollutants are concentrated in the upper 20 to 30 feet of the aquifer; public supply wells generally range in depth from about 75 to 150 feet. Dilution, dispersion, and adsorption tend to reduce the concentrations. Seasonal heavy rainfall and canal discharge accelerate ground-water circulation, thereby tending to dilute and flush upper zones of the aquifer. The ultimate fate of pollutants in the aquifer is the ocean, although some may be adsorbed by the aquifer materials en route to the ocean, and some are diverted to pumping wells.

17. Key Words and Document Analysis. 17a. Descriptors

Southeast Florida, Aquifer characteristics, *Ground-water quality, *Municipal water systems, *Water pollution, Urban runoff, Septic-tank effluent, Leachate, *Ground-water flow, Dilution, Unconfined ground water

17b. Identifiers/Open-Ended Terms

Dade County, Broward County, *Biscayne aquifer, Sole-source aquifer, Safe Drinking Water Act

17c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 37
	20. Security Class (This Page) UNCLASSIFIED	22. Price

BISCAYNE AQUIFER

Description

The Biscayne aquifer supplies all municipal water supply systems from south Palm Beach County southward (fig. 1), including the system for the Florida Keys which is supplied chiefly by pipeline from the mainland. It is a highly permeable wedge-shaped unconfined aquifer that is more than 200 ft (feet) thick in coastal Broward County and thins to an edge 35 to 40 mi (miles) inland in the Everglades (fig. 2). The aquifer forms an important unit of the hydrologic system of southeast Florida (fig. 3), which is managed by the South Florida Water Management District (SFWMD).

The Biscayne aquifer is composed of limestone, sandstone, and sand. In south and west Dade County the aquifer is primarily limestone and sandstone, but in north Dade County, Broward County and south Palm Beach County the aquifer is primarily sand. Generally, the sand content increases to the north and east.

In Dade County (fig. 4) oolitic limestone and quartz sand form the upper part of the aquifer (Parker and others, 1955, Plate 4). The limestone is thickest along the coast, possibly as much as 40 ft., but the base is usually less than 20 ft below sea level. Inland, the oolitic limestone thins and then disappears beneath the peat soil of the Everglades. Oolitic limestone is usually cross-bedded.

Fine to medium grained sand fills solution cavities in the oolitic limestone. Parker and others (1955, p. 102) indicated that the solution cavities occupy a significant volume of the limestone, causing it to have high horizontal and vertical permeabilities. It is the high vertical permeability that permits rapid infiltration of rainfall to the water table. Where the limestone does not crop out, it is covered by quartz sand (fig. 4) which also permits rapid infiltration of rainfall.

In the east part of Dade County, extending north as far as Fort Lauderdale, the lower part of the oolitic limestone contains bryozoans (Hoffmeister, 1974, p. 39). The bryozoan section slopes upward to the west to emerge at the surface in the Everglades. Near the coast the bryozoan section is as much as 10 ft thick (Hoffmeister, 1974, p. 39); it thins to the west beyond the east boundary of Collier County. The bryozoan limestone is also riddled with cavities which contribute to its high horizontal and vertical permeability.

Below the bryozoan layer, the Biscayne aquifer is composed of hard limestone containing numerous cavities, often cavernous. Because of the extremely high permeability of this limestone, all large-capacity wells are completed in this part of the aquifer, generally 40 to 100 ft below the land surface. The cavernous section generally does not contain loose sand. The aquifer does, however, contain thin interbedded layers

of hard, dense limestone in south Dade County, interior parts of Dade County and southwest Broward County. The dense layers probably are discontinuous and may locally retard, but do not prevent the vertical circulation of ground water. Beneath the coastal areas unconsolidated quartz sand separates the bryozoan limestone from the deeper hard limestone. The sand content increases northward which results in a corresponding decrease in overall transmissivity of the aquifer.

Parker and others (1955, p. 160) stated that the Biscayne aquifer "is the most productive of the shallow nonartesian aquifers in the area and is one of the most permeable in the world". He suggested that in east Dade County the transmissivity (hydraulic conductivity x saturated thickness = transmissivity) of the aquifer ranges from 4 to 15 million gallons per day per foot (Mgal/d/ft) ($5.x10^5$ to $2.0x10^6$ ft^2/d). He applied a median value of 5 (Mgal/d/ft) ($6.7x10^5$ ft^2/d) (Parker and others, 1955, p. 270). These values were obtained from aquifer tests using high-capacity wells, and by analyzing water-table contours adjacent to canals and in well-field areas. Storage coefficients from aquifer tests ranged from 0.047 to 0.247 (Parker and others, 1955, table 16).

The approximate areal distribution of transmissivity of the aquifer is shown in figure 5. Along the coast and in the northern part of southeast Florida the aquifer is thickest, but because it is composed mainly of sandy material, the transmissivity is lower. In central and south Dade County the aquifer is thinner, but the hydraulic conductivity is high because of the cavernous limestone; the transmissivity is, therefore, high. The decrease in transmissivity to the west is due to the thinning of the aquifer.

The transmissivity ranges from about 3 Mgal/d per foot ($4.0x10^5$ ft^2/d) in southeast Broward County to 0.4 Mgal/d per foot ($5.4x10^4$ ft^2/d) in the northeast coastal Broward County (Sherwood and others, 1973, p 66-67) and in the vicinity of Boca Raton (McCoy and Hardee, 1970, p. 25). Values increase to about 4 Mgal/d per foot ($5.4x10^5$ ft^2/d) (Sherwood and others, 1973, p. 66) in interior parts of southern Broward County. In Boca Raton, fine and medium sand extends to at least 60 ft below the surface. Permeable limestone at greater depth is discontinuous and becomes increasingly sandy north of Boca Raton (McCoy and Hardee, 1970, p. 7-11). Storage coefficients in Broward County are as high as 0.34 (Sherwood and others, 1973, p. 67).

Soil Cover

The soil that covers southeast Florida is of hydrologic importance because it controls the infiltration of rainfall, the operation of septic tanks, and indirectly relates to the quality of the ground water. The infiltration of rainfall is rapid in areas covered by sand or where soil is absent; infiltration is retarded in areas covered by marl or clayey soil.

In the agricultural areas of south and interior Dade County, irrigation wells are usually rotary drilled to depths of 25 to 35 ft. Casing is not required because the aquifer is solely limestone. Hundreds of these wells are drilled at spacings as small as 300 ft. A large capacity irrigation pump mounted on a truck is moved from well to well and each is pumped for short intervals at rates of 500 to 1,000 gpm.

Thousands of small diameter (2-inch) wells are used throughout the year for irrigation of residential lawns and shrubs. These wells, about 20 to 50 ft deep, are normally pumped at rates of 25 to 40 gpm. In areas near the coast or adjacent to tidal canals no fresh ground water is available so residences use municipal water for lawn irrigation. Shallow wells of small diameter are also used for domestic supplies in areas not serviced by municipal systems.

Recharge and Discharge

The Biscayne aquifer is recharged principally by rainfall. The average annual rainfall in the lower east coast area varies areally from 58 to 64 in; the annual extremes experienced are 29 in and 106 in (Leach and others, 1972, p. 9-10). The rainy season, June - October, contributes about 70 percent of the total. During this period heavy rains are associated with tropical disturbances and frequent short, local downpours. Light to moderate rainfall during the dry season is associated with cold fronts moving southward through Florida.

The oolitic limestone and sand that form the upper surface of the aquifer readily absorb rainfall and move it rapidly to the water table. The rapid response of the water table to rainfall in the Miami area is indicated in figure 9. Infiltration of rainfall is retarded but not prevented in interior parts of Dade and Broward Counties where thin marl deposits cover the surface, and along the shallow elongate depressions that dissect the urban area. Other sources of recharge to the aquifer are: (1) Connate ground water of inferior quality (Parker and others, 1955, fig. 221) along the upper reaches of the Miami, the North New River, and the Hillsboro Canals in Broward and Palm Beach Counties (northwest of the limits of the Biscayne aquifer) that is transferred eastward during dry seasons; (2) Water from Lake Okeechobee released by the SFWMD into the Miami Canal during the later weeks of the dry seasons to replenish the Miami area; and (3) Effluent from septic tanks, certain sewage treatment plant and disposal ponds scattered throughout the urban area.

Parker and others (1955) and Meyer (1971) estimated that 20 in of the approximately 60 in of annual rainfall in Dade County is lost directly by evaporation, about 20 in is lost by evapotranspiration after infiltration, 16 to 18 in is discharged by canals and by coastal seepage, and the remainder is utilized by man. Sherwood and others (1973, p. 49) indicated comparable values for Broward County. Thus, nearly 50 percent of the rainfall that infiltrates the Biscayne aquifer is discharged to the ocean, a reflection of the high degree of connection between the aquifer and the canal system.

REF.5

NUS CORPORATION **INTERNAL CORRESPONDENCE**

C-586-3-0-209

TO:	K. D. Pass, Florida Section Leader	**DATE:**	**March 22, 1990**
FROM:	W. Smitherman	**COPIES:**	Phil Blackwell Bob Donaghue Katharine Siders

SUBJECT: Municipal Water Systems for Broward County, Florida

Due to the large number of sites in Broward County to be assessed, I have assembled a data base for the municipal water systems in the county. Information was obtained during visits to the municipalities, telephone conversations and through the mail. Two basic documents were generated, the first being the data base (attached as Appendix A) to provide the system names, a principal contact to verify information, telephone numbers, addresses, the number of connections or population served, number of wells and wellfields and a remarks section. The second document is a detailed topographic map showing the extent of the municipalities' distribution system along with the location of their wells and wellfields. In addition to the topographic map, almost all the municipalities provided maps, showing their distribution areas along with the wells and wellfields, for additional reference if needed.

The topographic map will be available in a central location so that the project managers can locate their sites on the map. The project managers can then identify the systems (wellfields) within the 4-mile radius of their sites and use the data base to call up only those municipalities within the 4-mile radius that pertain to their sites.

In preparing this information, several interesting items were identified:

1. The city of Ft. Lauderdale provides potable water to the cities of Wilton Manor and Oakland Park, since they do not have wells.

2. The city of Coconut Creek purchases water from the Broward County Utility Dept. (BUCD)-2A wellfield. Coconut Creek does not have municipal wells.

3. The city of Coral Springs has 4 different systems within the city limits. Coral Springs Improvement District provides potable water to the southern third of the city. The city of Coral Springs provides water to the middle third of the city. Royal Utilities (a small area) and the North Springs Improvement District provides potable water to the northern third of the city.

4. Broward County Utility Department (BCUD) has 7 systems in the county; however, system BCUD 3C is off-line and potable water is provided by the city of Hollywood.

5. All systems in the county have emergency hook-ups with other municipalities, except the Royal Utilities in Coral Springs. This system has no emergency hook-up.

6. Several communities have multiple wellfields; in all cases the water is mixed in the distribution lines. The three systems for the city of Plantation are presented since the number of connections for each were available.

7. The depths of wells were not recorded on the data base, since all the wells are obtaining water from the Biscayne aquifer, a sole-source aquifer. However, information obtained during interviews revealed that most municipal wells ranged from 80-120 feet below land surface (bls).

8. In general, the distribution area for each municipality was normally the corporate city limits.

The objective of this memorandum was to gather the needed information into one source and to assist the project manager in obtaining the groundwater use data necessary to complete the site assessments in a timely manner. Bringing together all the municipal systems in the county into one data base and one map showing the locations should expedite this process. Any project managers wishing to access the data base should consult either you or me.

MUNICIPAL WATER SYSTEM
FOR BROWARD COUNTY, FL

03/28/90

SYSTEM	CONTACT PHONE	ADDRESS	(P)OP SERVED (C)ONNECTIONS	# OF WELLS	# OF FIELDS	DATE ENTERED	REMARKS
BCUD - 1A	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	10843 (C)	7	1	03/19/90	Emergency hookups with Ft. Lauderdale, Tamarac, and Lauderdale
BCUD - 1B	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	3397 (C)	5	1	03/15/90	In production 8 hrs/day, interconnect with BCUD-1A Emergency hookup with Ft. Lauderdale
BCUD - 2A	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	18170 (C)	9	2	03/15/90	Emergency hookups with Deerfield Beach
BCUD - 3A	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	5305 (C)	6	1	03/15/90	Emergency hookups with Dania, Ft. Lauderdale
BCUD - 3B	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	6207 (C)	4	1	03/15/90	Emergency hookups with Miramar and Hollywood
BCUD - 3C	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	3648 (C)	3	1	03/15/90	System OFF-LINE; Purchasing water from City of Hollywood
BROADVIEW	MIKE SCOTTIE (305)960-3051	BROWARD CTY UTIL DPT 2401 N POWERLINE RD POMPANO BEACH, FL 33064	2185 (C)	3	1	03/15/90	Emergency hookups with Tamarac and N. Lauderdale
BROADVIEW PARK W.D.	MIKE SCHWAB (305)583-4223	BROADVIEW PARK W.D. 1955 SW 50TH AVE PLANTATION, FL 33317	1800 (C)	1	1	03/19/90	Emergency hookups with Plantation
COCONUT CREEK	GARTH HINCKEL (305)973-6784	COCONUT CK WATER DPT 4800 W COPAND RD COCONUT CREEK, FL 33063	32000 (P)	0	0	03/19/90	Potable water supplied by BCUD - 2A
COOPER CITY	GEORGE HACKNEY (305)434-5519	COOPER CITY UTIL 90 SW 50TH PLACE COOPER CITY, FL 33328	7500 (C)	6	2	03/15/90	Emergency hookups with Dania and Bonaventure

MUNICIPAL WATER SYSTEM
FOR BROWARD COUNTY, FL

03/28/90

SYSTEM	CONTACT PHONE	ADDRESS	(P)OP SERVED (C)ONNECTIONS		# OF WELLS	# OF FIELDS	DATE ENTERED	REMARKS
CORAL SPRGS IMPRM DS	CHUCK PERRON (305)753-0380	CORAL SPRGS IMPRM DS 10300 NW 11TH MANOR CORAL SPRINGS, FL 33071	30000	(P)	7	1	03/19/90	Emergency hookups with Coral Springs
CORAL SPRINGS	AL PAZIN (305)344-1172	CITY OF CORAL SPRING 9551 W SAMPLE RD CORAL SPRINGS, FL 33075	40000	(P)	12	1	03/19/90	Emergency hookups with Coral Springs and North Springs improvement Dist
DANIA	DON WINDHAM (305)921-7781	BERRY AND CALVIN INC 2 OAKWOOD BLVD ST120 HOLLYWOOD, FL 33020	4064	(C)	2	1	03/15/90	Additional potable water provided by BCUD, Ft. Lauderdale and Hollywood
DAVIE	DANIEL COLABELLA (305)797-1080	DAVIE WATER SYSTEM 6591 SW 45TH ST DAVIE, FL 33314	7000	(C)	16	2	03/19/90	Emergency hookups with Hollywood, Cooper City and Ft. Lauderdale
DEERFIELD BEACH	DALE HOLINBECK (305)480-4270	CITY OF DEERFIELD BC 150 NE 2ND AVE. DEERFIELD, FL 33441	10800	(C)	18	2	03/15/90	Emergency hookups with BCUD 2A, Hillsboro Bch and Boca Raton
FERNCREST UTILITIES	ROBERT SALERNO (305)989-6200	FERNCREST UTILITIES 3015 SW 54TH AVE. FT. LAUDERDALE, FL 33314	1600	(C)	2	1	03/15/90	Emergency hookups with Davie and Ft. Lauderdale
FT LAUDERDALE	JAMES SINDELAR (305)492-7858	FT LAUDERDALE UTIL P.O. BOX 14250 FT. LAUDERDALE, FL 33302	56000	(C)	43	2	03/15/90	Supply potable water to Wilton Manor, Oakland Park, BCUD, BC Port Auth, Dania and Tamarac East
HILLSBORO BEACH	RODNEY MAIN (305)941-8937	HILLSBORO BCH WATER 925 NE SAMPLE RD POMPANO BEACH, FL 33064	185	(C)	3	1	03/15/90	Emergency hookups with BCUD 2A, Deerfield Beach, Seasonal pop from 2300 - 3800
HOLLANDALE	MIKE GOOD (305)458-3251	DEPT OF PUBLIC WORKS 308 S DIXIE HWY HOLLANDALE, FL 33009	5500	(C)	2	1	03/15/90	6 wells shut down, salt-water intrusion. Addi-tional water supplied by N. Miami
HOLLYWOOD	MARSHALL BERGAKER (305)921-3251	CITY OF HOLLYWOOD UT P.O.BOX 229045 HOLLYWOOD, FL 33022	130000	(P)	20	2	03/28/90	Supplies potable water to Dania. Emergency hookups with surrounding munici-palities

MUNICIPAL WATER SYSTEM
FOR BROWARD COUNTY, FL

03/28/90

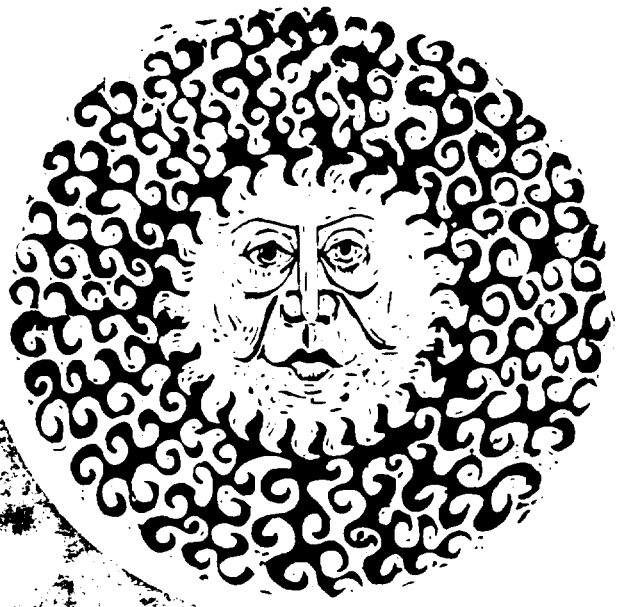
SYSTEM	CONTACT PHONE	ADDRESS	(P)OP SERVED (C)ONNECTIONS	# OF WELLS	# OF FIELDS	DATE ENTERED	REMARKS
LAUDERHILL	JOHN SCHRIEFFER (305)739-0100	CITY OF LAUDERHILL 2000 CITY HALL DRIVE LAUDERHILL, FL 33313	8600 (C)	7	1	03/21/90	Emergency hookups with Plantation and Sunrise
MARGATE	RICK VAN ACKER (305)972-0828	MARGATE UTILITIES 1001 W RIVER DR MARGATE, FL 33063	23723 (C)	12	2	03/19/90	Emergency hookups with N. Lauderdale and Pompano Beach
MIRAMAR	LOU BADAMI (305)989-6200	MIRAMAR CITY HALL 6740 MIRAMAR PKWY MIRAMAR, FL 33083	12100 (C)	9	2	03/15/90	Emergency hookups with BCUD 3C and Pembroke Pine
NORTH LAUDERDALE	ED GOEBELS (305)722-0900	CITY OF N LAUDERDALE 701 SW 71ST AVE NORTH LAUDERDAE, FL 33068	6328 (C)	3	1	03/19/90	Emergency hookups with Tamarac, BCUD, and Margate
NORTH SPRGS IMPRM DS	CHUCK PERRON (306)753-0380	NORTH SPRGS IMPRM DS 10300 NW 11TH MANOR CORAL SPRINGS, FL 33071	5000 (P)	2	1	03/19/90	Emergency hookups with Coral Springs. Two (2) new wells due 6/90
OAKLAND PARK	ROLLAND SALSBERRY (305)561-6259	OAKLAND PARK UTIL 3650 NE 12TH AVE OAKLAND PARK, FL 3334	2700 (C)	0	0	03/15/90	Potable water supplied by City of Ft. Lauderdale
PEMBROKE PINES	DAVE MARTINEZ (305)435-6540	CITY OF PEMBROKE PNS 7960 JOHNSON ST PEMBROKE PINES, FL 33024	31581 (C)	8	2	03/15/90	Emergency hookups with Cooper City, Hollywood and Miramar
PLANTATION CENTRAL	DUAINE WALLACE (305)797-2169	CITY OF PLANTATION 700 NW 91ST AVE PLANTATION, FL 33317	10043 (C)	10	1	03/23/90	Interconnected with Plantation East System
PLANTATION EAST	DUAINE WALLACE (305)797-2169	CITY OF PLANTATION 500 NW 65TH AVE PLANTATION, FL 33317	9891 (C)	10	1	03/28/90	Emergency hookups with Ft. Lauderdale, Sunrise and Broward Park. Interconnected with Pltn Cntrl
PLANTATION WEST	DUAINE WALLACE (305)797-2169	CITY OF PLANTATION 700 NW 91ST AVE PLANTATION, FL 33317	1336 (C)	0	0	03/23/90	Potable water supplied by Plantation Central

MUNICIPAL WATER SYSTEM
FOR BROWARD COUNTY, FL

03/28/90

SYSTEM	CONTACT PHONE	ADDRESS	(P)OP SERVED (C)ONNECTIONS	# OF WELLS	# OF FIELDS	DATE ENTERED	REMARKS
POMPANO BEACH	STAN LEMCKE (305)786-4105	POMPANO BCH PBLC WKS P.O.BOX 1300 POMPANO BEACH, FL 33061	16900 (C)	22	2	03/19/90	Emergency hookups with BCUD - 2A
ROYAL UTILITY	DOUGLAS BRIGHT (305)341-7565	ROYAL UTILITY CO 8900 NW 44TH COURT CORAL SPRINGS, FL 33065	173 (C)	3	1	03/19/90	No Emergency hookups
SUNRISE	WALTER GERRARD (305)741-6570	CITY OF SUNRISE 4350 SPRINGTREE DR SUNRISE, FL 33351	29742 (C)	28	3	03/22/90	Emergency hookups with Plantation and Lauderhill
TAMARAC	LONNIE SCOTT (305)726-2300	TAMARAC UTILITIES 7805 NW 61ST ST TAMARAC, FL 33321	17074 (C)	13	1	03/19/90	Emergency hookups with BCUD -1A and Lauderhill
WILTON MANOR	JOE MOSS (305)390-2190	CITY OF WILTON MANOR 524 NE 21ST COURT WILTON MANOR, FL 33305	4500 (C)	0	0	03/15/90	Potable water supplied by city of Ft. Lauderdale

REF. 6



CLIMATIC ATLAS OF THE UNITED STATES

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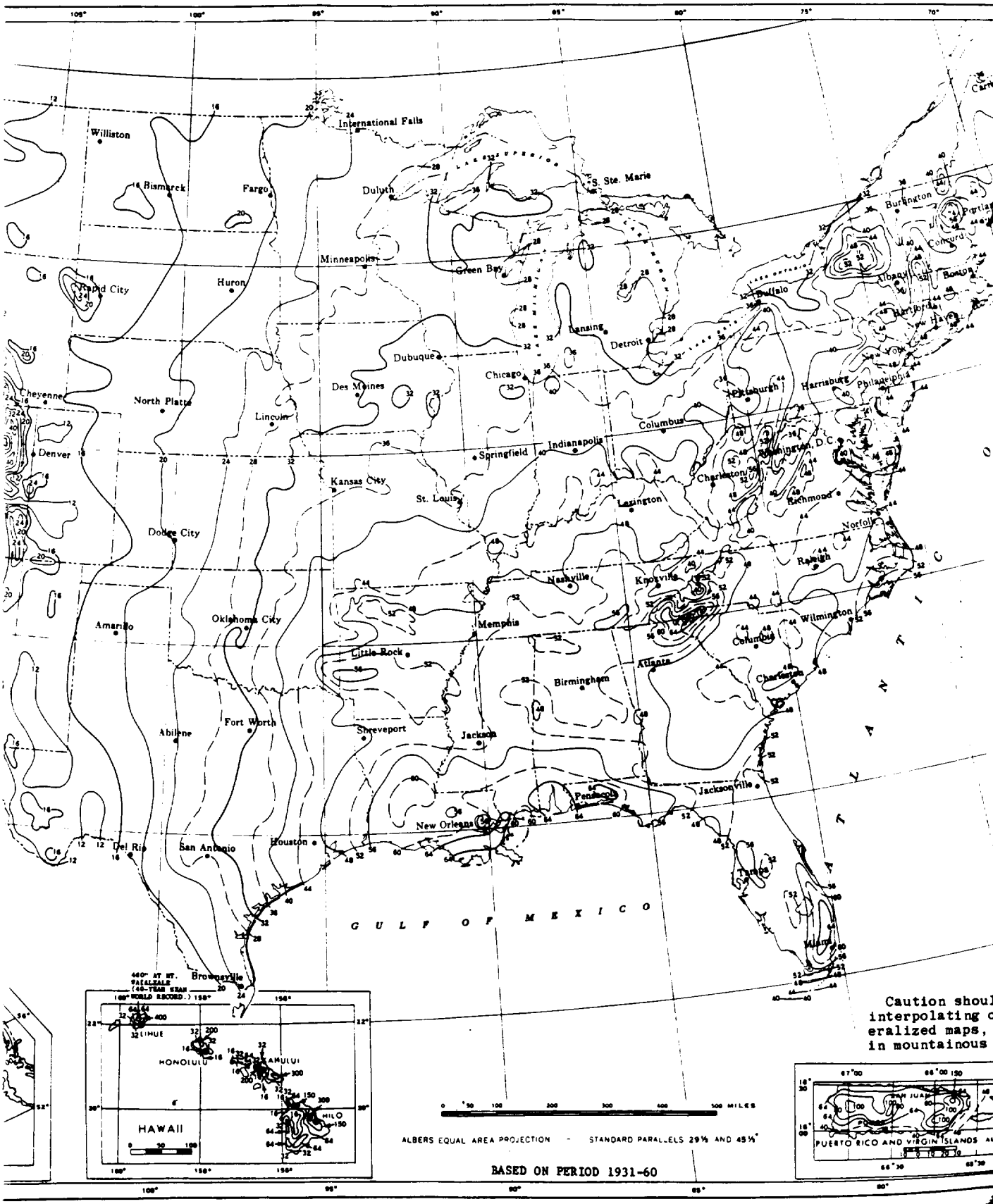
NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



Caution shoul
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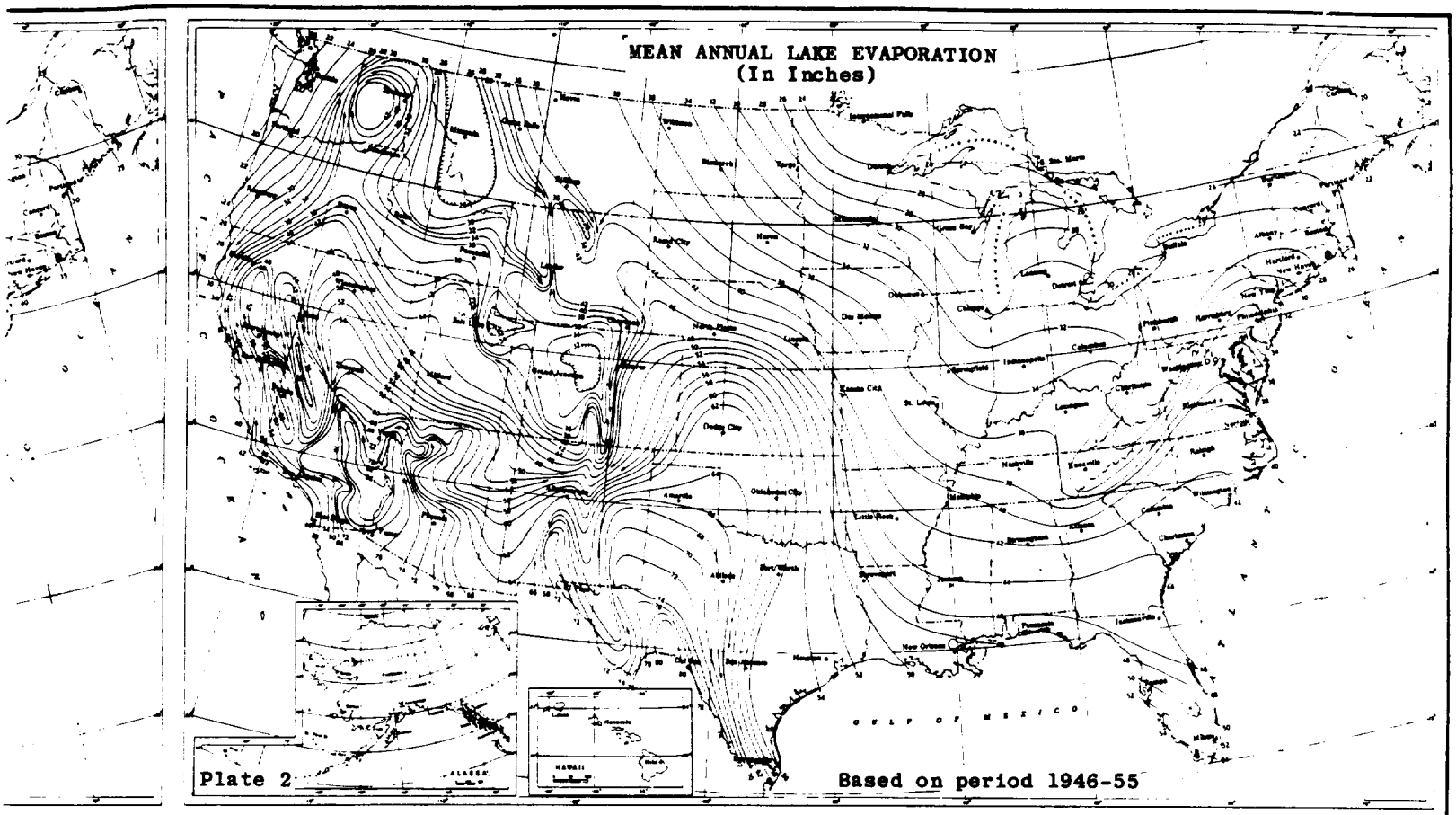
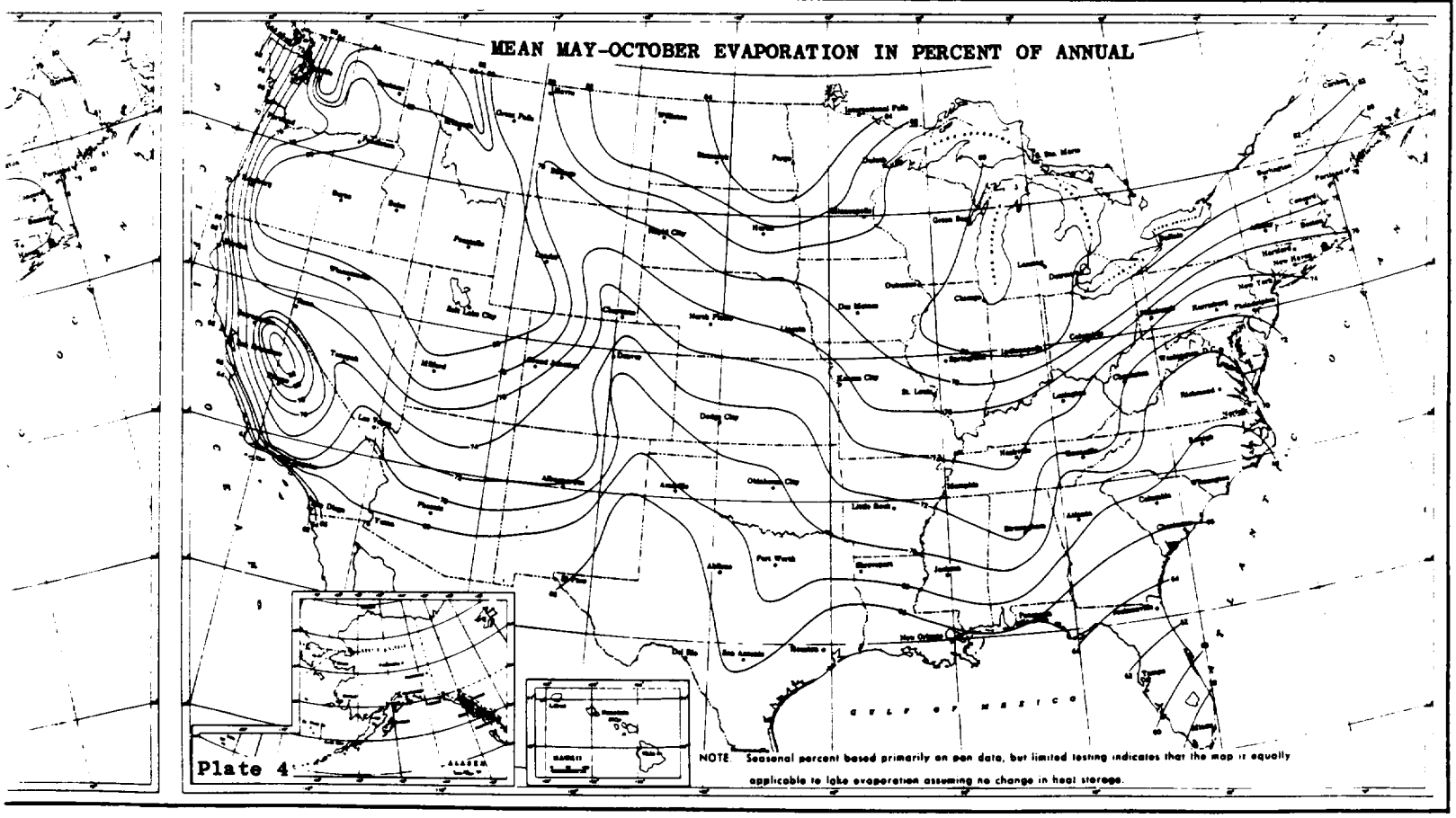

MEAN ANNUAL LAKE EVAPORATION
(In Inches)
GULF OF MEXICO
Plate 2
Based on period 1946-55

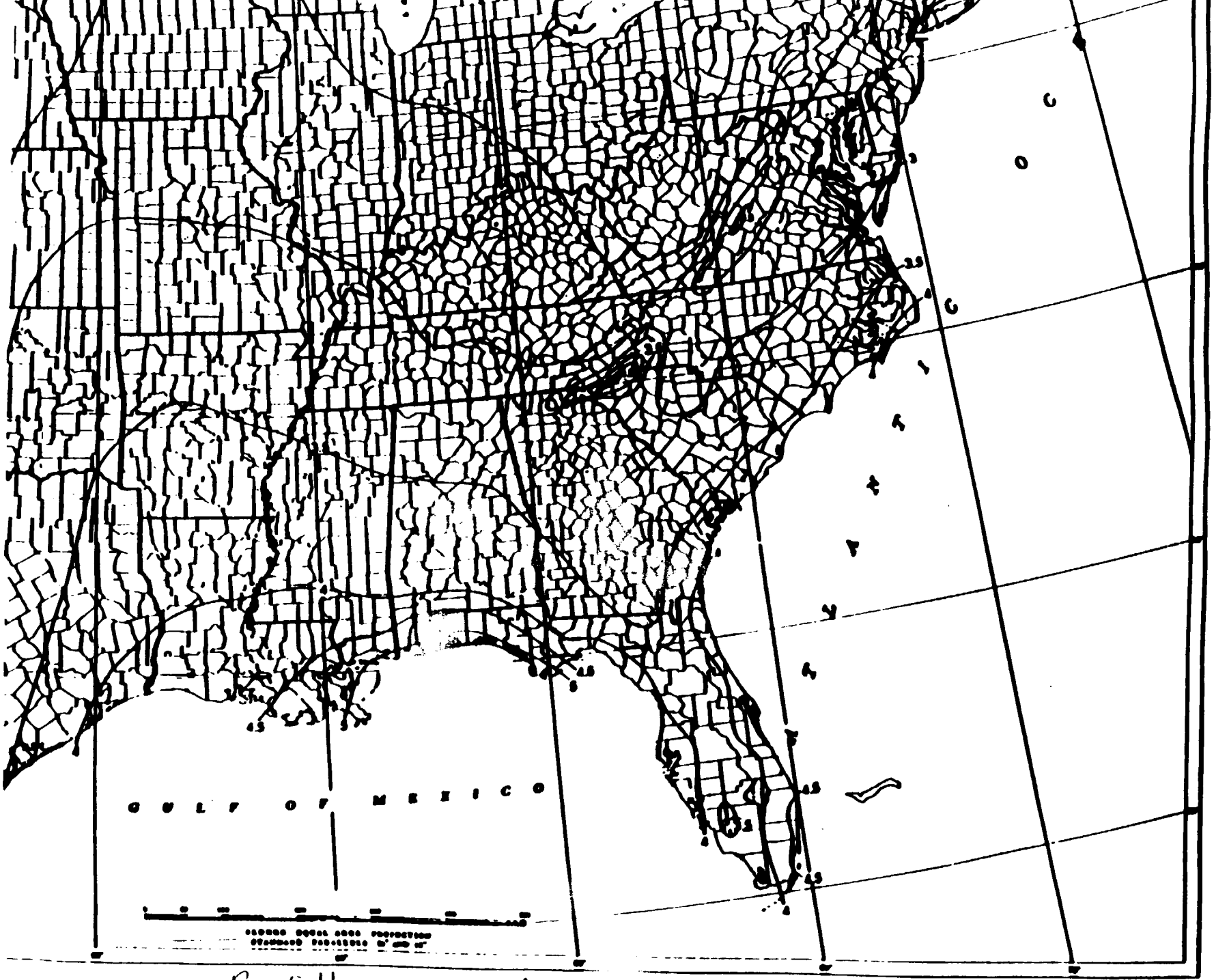

MEAN MAY-OCTOBER EVAPORATION IN PERCENT OF ANNUAL
GULF OF MEXICO
Plate 4
NOTE. Seasonal percent based primarily on pan data, but limited testing indicates that the map is equally applicable to lake evaporation assuming no change in heat storage.

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture


GULF OF MEXICO

Reference No. 6

GEOLOGY OF THE SURFICIAL AQUIFER SYSTEM

BROWARD COUNTY, FLORIDA

LITHOLOGIC LOGS

By Carmen R. Causaras

U.S. GEOLOGICAL SURVEY

WATER-RESOURCES INVESTIGATIONS REPORT 84-4068

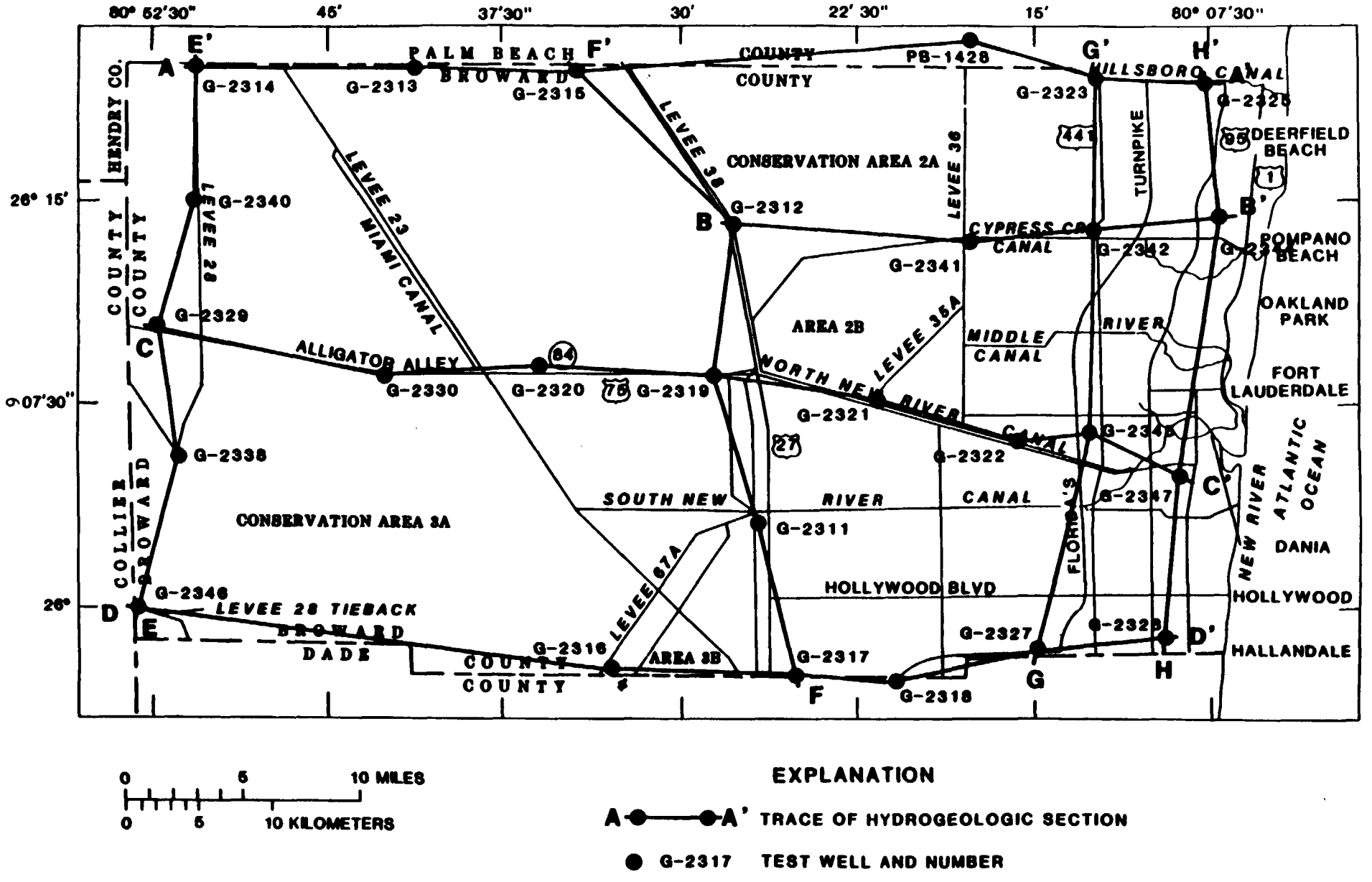


Figure 3.--Location of test drilling sites and hydrogeologic sections (from Causaras, 1985). Well numbers and site names are listed in table 1.

OVERSIZED

DOCUMENT

MAP

REF.9

Water Resources of Southeastern Florida

By GARALD G. PARKER, G. E. FERGUSON, S. K. LOVE, *and others*

WITH SPECIAL REFERENCE TO THE GEOLOGY AND GROUND WATER OF THE MIAMI AREA

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1255

Prepared in cooperation with the Florida Geological Survey, Dade County, cities of Miami and Miami Beach, and other agencies

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON · 1955

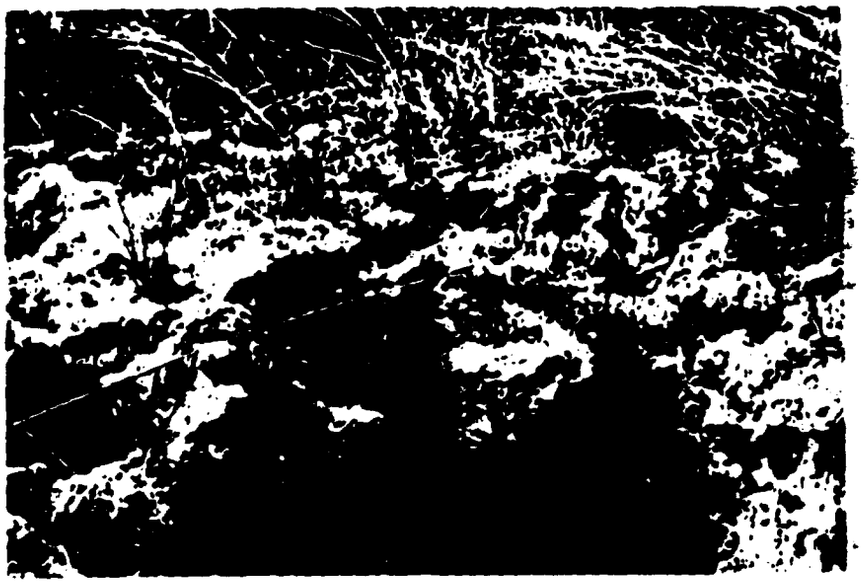


Figure 25.—Close-up view of one of the larger solution holes in Dade County.

and downward movement of corrosive waters. (See figs. 15, 25 and 26.)

Apparently, no original cavity is needed to start a solution hole, though the existence of a ready-made hole hastens the process. It has been suggested that many vertical solution holes begin to be dissolved along taproots of trees, and possibly some holes do originate in this fashion, but it is not the most common way. On the surface of hard limestone or soft calcareous clayey marl the first effects of solution appear as small surficial pits resembling raindrop marks in mud. These pits gradually deepen, many retaining their rounded outlines. Without visible outlet along the sides or bottom, they later become tubes which enlarge into holes of various shapes and sizes, but generally they develop vertically.

The work of solution is evident wherever outcrops of rock occur, as on the bare limestone surface south of Miami or in the Big Cypress Swamp, in canals and street cuts, in borrow ditches and rock quarries, or in river and creek banks. In large areas of southern Florida it is evident that at least one-fourth of the total volume of limestone, once more or less solid rock, is now occupied by solution holes, generally filled with sand. (See fig. 26.) Trees blown over by hurricanes rip up rock with their roots, thus leaving a new and localized depression for concentration of rain water and the start of active solution holes. Adjacent holes enlarge, coalesce, and become increasingly effective in draining surface water underground. Many solution depressions of this kind,

p. 519-524) and as reported by Parker (Parker, Ferguson, Love, and others, 1955, p. 239-274) are summarized in the following table (see fig. 14 for location of test sites).

Test site	Range in computed coefficient of transmissibility (gpd/ft)	
	Lowest	Highest
S 1	3,250,000	4,300,000
G 551	9,000,000	14,000,000
G 552	2,800,000	5,700,000
G 553	2,500,000	3,900,000
G 218	3,900,000	4,400,000

At all the test sites the Miami oolite forms the upper part of the Biscayne aquifer, and at most of them it is underlain by a bed of sand. The permeability of the oolite and sand is lower than that of the underlying cavernous limestone of the Fort Thompson formation and thus acts as a leaky roof during the pumping of a well, and the formation initially acts as an artesian aquifer. The Bessel function then can be used in the computations using formulas developed by Jacob (1945, p. 198-208). John G. Ferris (1950, personal communcation) determined the following values from the test data:

Well No.	Coefficient of transmissibility (gpd/ft)
S 1	3,200,000
G 551	9,700,000
G 552	3,200,000
G 553	3,200,000

The T value of the test for well G 551 by both calculations is inconsistent with the values for the other tests. The results of the other three tests using the Bessel function are extraordinarily consistent considering the character of the aquifer. The permeability of the Biscayne aquifer probably averages between 50,000 and 70,000 gallons per day per square foot, according to Parker (1951). No satisfactory computation of the storage coefficient has yet been obtained.

Several assumptions concerning the aquifer must be applied in using formulas to determine these coefficients: (1) the aquifer is homogeneous and isotropic and transmits water with equal readiness in all directions; (2) the discharging well penetrates the entire thickness of the aquifer; (3) there is no turbulent flow within the aquifer, and during the pumping there is no vertical convergence of flow lines toward the pumped well; and (4) water is discharged from storage instantaneously with reduction in head.

REF.10

[redacted]

STATE BOARD [redacted]

FLORIDA GEOLOGICAL SURVEY

REPORT OF INVESTIGATIONS NO. 17

[redacted]

[redacted] AND [redacted], FLORIDA

[redacted] and NEVIN D. HOY

[redacted]

REF.

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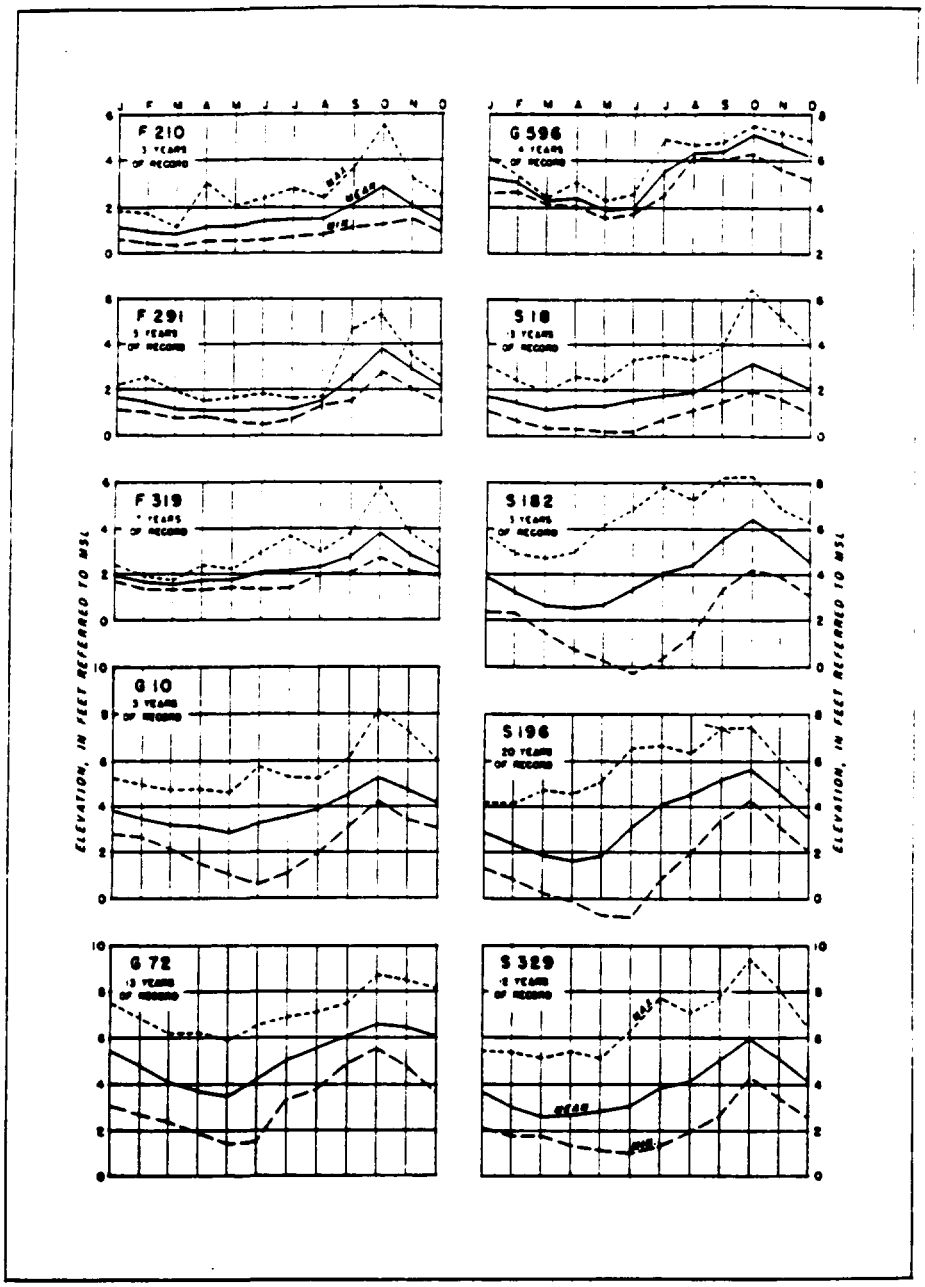

Figure 12. Chart of comparative average monthly water levels in selected wells.

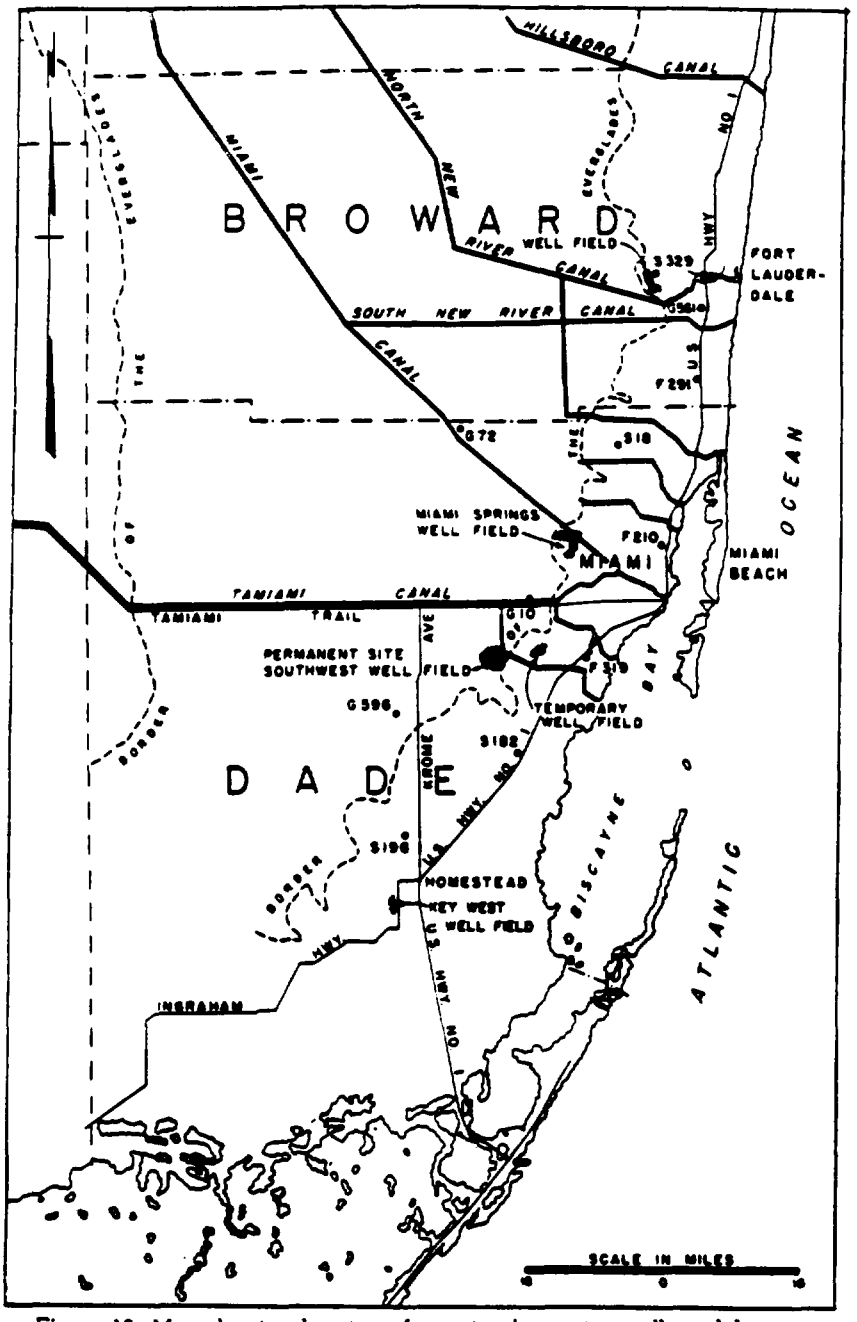

Figure 13. Map showing location of certain observation wells and locations of large municipal well fields.

Reference No. 11

R. Allan Freeze

Department of Geological Sciences
University of British Columbia
Vancouver, British Columbia

John A. Cherry

Department of Earth Sciences
University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

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Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

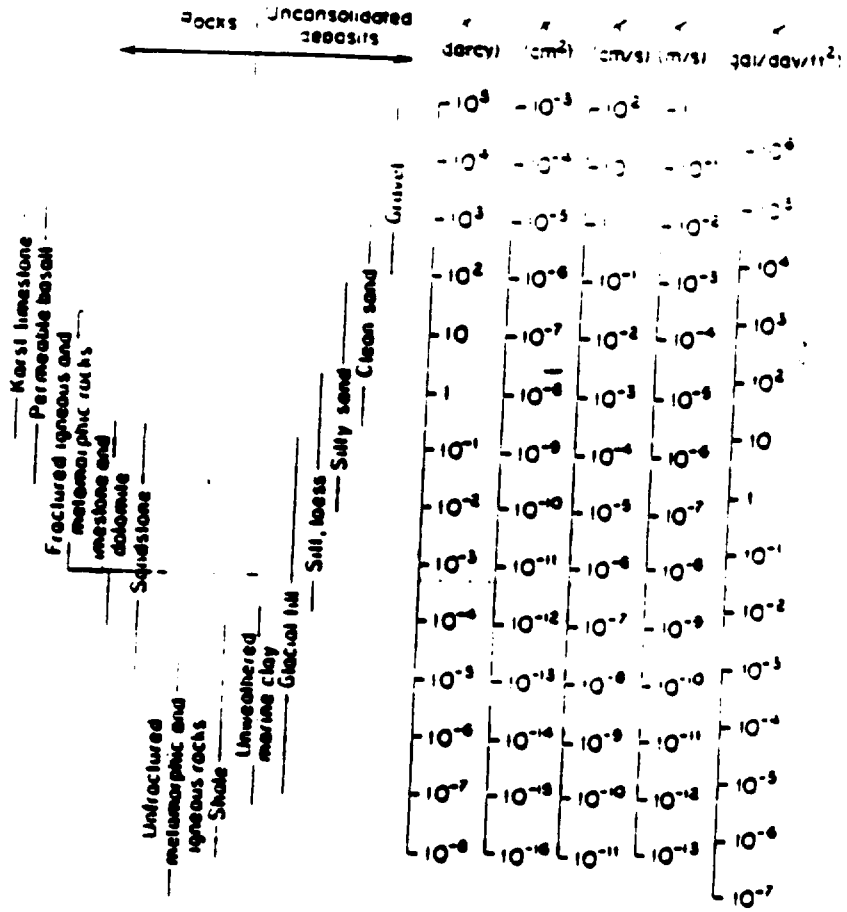


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k^a			Hydraulic conductivity, K		
	cm²	ft²	darcy	m/s	ft/s	U.S. gal/day/ft²
cm²	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{3}	3.22×10^{3}	1.85×10^{9}
ft²	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-6}	1.82×10^{3}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-7}	3.15×10^{4}	3.05	1	6.46×10^{5}
U.S. gal/day/ft²	5.42×10^{-10}	5.83×10^{-13}	5.49×10^{-3}	4.72×10^{-7}	1.55×10^{-6}	1

[a] To obtain k in ft², multiply k in cm² by 1.08×10^{-3}.

Freeze, R.A., and J.A. Cherry, "Groundwater"
Prentice-Hall, Inc., Englewood Cliffs, [illegible]

Reference No. 12

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES
Ramon Shields, *Executive Director*

DIVISION OF INTERIOR RESOURCES
Charles M. Sanders, *Director*

BUREAU OF GEOLOGY
Charles W. Hendry, Jr., *Chief*

Report of Investigations No. 75

EVALUATION OF HYDRAULIC CHARACTERISTICS OF A DEEP ARTESIAN AQUIFER FROM NATURAL WATER-LEVEL FLUCTUATIONS, MIAMI, FLORIDA

REF

by
Frederick W. Meyer
U. S. Geological Survey

Prepared by the
UNITED STATES GEOLOGICAL SURVEY
in cooperation with the
BUREAU OF GEOLOGY
FLORIDA DEPARTMENT OF NATURAL RESOURCES
and with other
CITY, COUNTY, STATE, AND FEDERAL AGENCIES

Tallahassee, Florida

1974

CONTENTS

LOCATION AND GEOHYDROLOGIC SETTING

The Peninsula well is in Dade County, about 10 miles southwest of Miami (fig. 1). It is 2,927 feet deep and is cased to 1,810 feet (fig. 2). The land surface at the well is about 6 feet above msl (National Ocean Survey, mean sea-level datum 1929).

The local water supply is obtained from the Biscayne aquifer, a highly permeable limestone strata that underlies the area to a depth of about 100 feet. Beneath the Biscayne aquifer is a 300-foot thick confining bed composed of sand and clay, which confines the water in the underlying Floridan aquifer system. The Floridan is about 1,500 feet thick and is composed of several

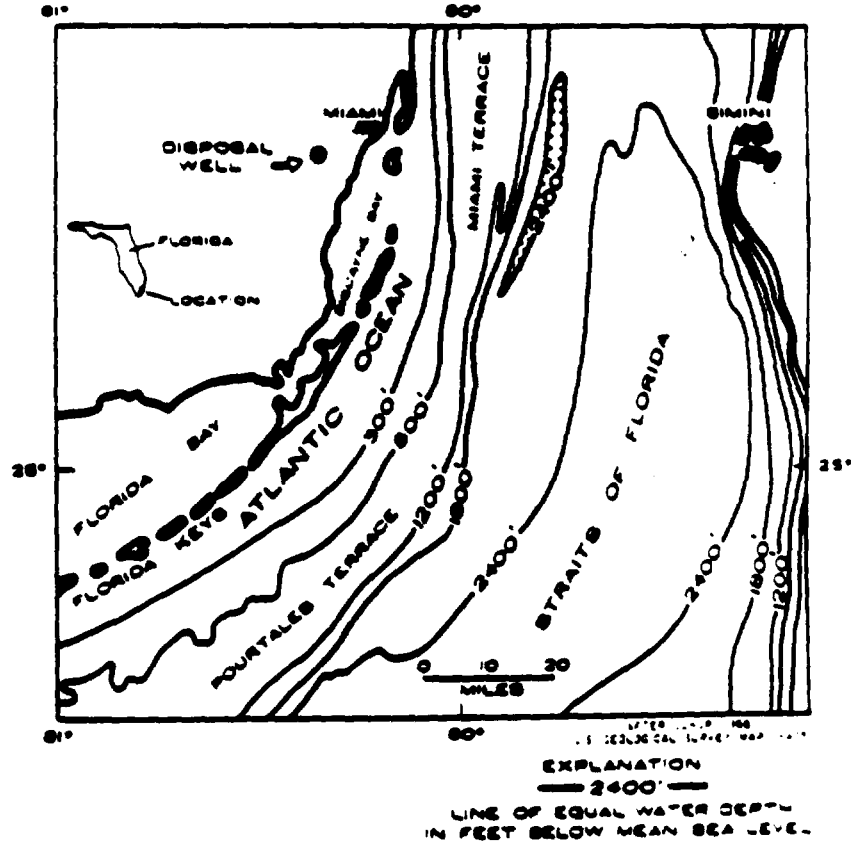


Figure 1 Map showing site location.

hydraulically separate water-bearing zones (Meyer, 1971). The upper 600-foot section is composed of limestone interbedded with calcareous clay and the lower 900-foot section (the principal water-bearing zone) is composed chiefly of highly permeable dolomitic limestone. The head and the salinity of the ground water increase with depth in the Floridan aquifer. Locally the head of the brackish water in the principal artesian water-bearing zone stands 41 feet above msl.

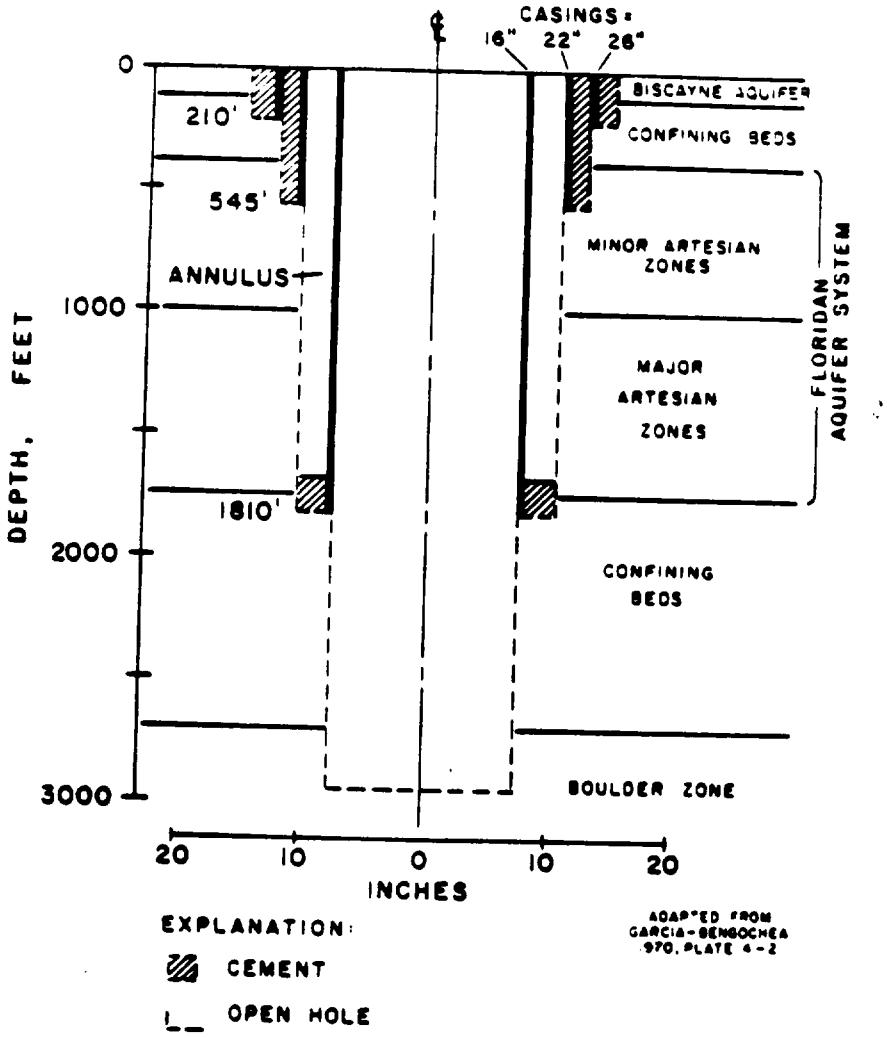
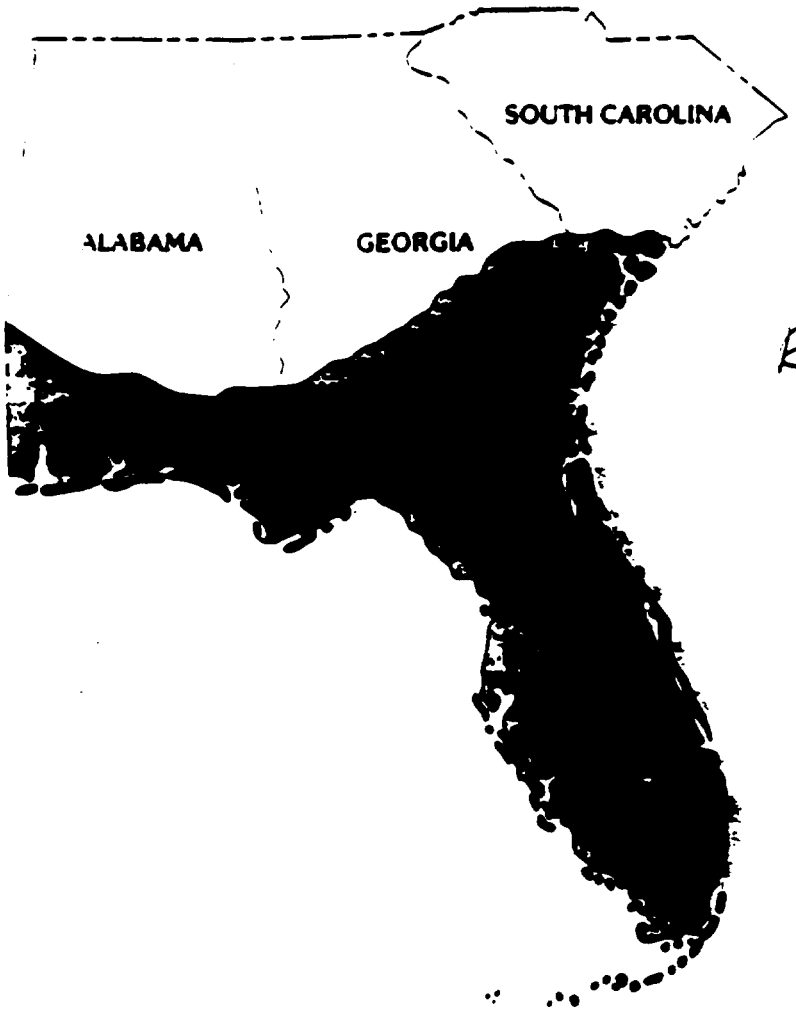


Figure 2 Sketch showing well construction.

Reference No. 13

SUMMARY OF THE HYDROLOGY OF THE FLORIDAN AQUIFER SYSTEM IN FLORIDA AND IN PARTS OF GEORGIA, SOUTH CAROLINA, AND ALABAMA



REF

U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1403-C

Summary of the Hydrology of the Floridan Aquifer System in Florida and in Parts of Georgia, South Carolina, and Alabama

By RICHARD H. JOHNSTON *and* PETER W. BUSH

REGIONAL AQUIFER-SYSTEM ANALYSIS

U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1403-A

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1988

CONTENTS

ILLUSTRATIONS

(Plates are in pocket)

TABLES

TABLE 1.—*Terminology applied to the Floridan aquifer system*

SERIES/STAGE		PARKER AND OTHERS (1955)		SPRINGFIELD (1966)		MILLER (1982b, 1982d)		MILLER (1986)	
		Formations[1]	Aquifer	Formations[1]	Aquifer	Formations[1]	Aquifers	Formations[1]	Aquifers
MIOCENE		Hawthorn Formation	Where permeable	Hawthorn Formation		Hawthorn		Hawthorn	
		Tampa Limestone	Floridan aquifer	Tampa Limestone	Principal artesian aquifer	Tampa Limestone	Where permeable	Tampa Limestone	Where permeable
OLIGOCENE		Suwannee Limestone		Suwannee Limestone		Suwannee Limestone	Tertiary limestone aquifer system	Suwannee Limestone	Floridan aquifer system
EOCENE	Upper	Ocala Limestone		Ocala Limestone		Ocala Limestone		Ocala Limestone	
	Middle	Avon Park Limestone Lake City Limestone		Avon Park Limestone Lake City Limestone		Avon Park Limestone Lake City Limestone		Avon Park Formation	
	Lower			Oldsmar Limestone		Oldsmar Limestone		Oldsmar Formation	
PALEOCENE						Cedar Keys Limestone		Cedar Keys Formation	

[1] Names apply only to peninsular Florida and southeast Georgia except for Ocala Limestone and Hawthorn Formation.

greater than that of those rocks that bound the system above and below. As shown in table 1, the Floridan includes units of Late Paleocene to Early Miocene age. Locally in southeast Georgia, the Floridan includes carbonate rocks of Late Cretaceous age (not shown in table 1). Professional Paper 1403-B presents a detailed geologic description of the Floridan, its component aquifers and confining units, and their relation to stratigraphic units.

The top of the Floridan aquifer system represents the top of highly permeable carbonate rock that is overlain by low-permeability material—either clastic or carbonate rocks. Throughout much of the area, this upper confining unit consists largely of argillaceous material of the Miocene Hawthorn Formation (table 1). Similarly the base of the Floridan is that level below which there is no high-permeability rock. Generally the underlying low-permeability rocks are either fine-grained clastic materials or bedded anhydrite. These sharp permeability contrasts at the top and base of the Floridan commonly occur within a formation or a time-stratigraphic unit as described by Miller (1986).

AQUIFERS AND CONFINING UNITS

The Floridan aquifer system generally consists of an Upper Floridan aquifer and a Lower Floridan aquifer, separated by less-permeable beds of highly variable properties termed the middle confining unit (Miller, 1986, p. B53). In parts of north Florida and southwest Georgia, there is little permeability contrast within the aquifer system. Thus in these areas the Floridan is effectively one continuous aquifer. The upper and lower aquifers are defined on the basis of permeability, and their boundaries locally do not coincide with those of either time-stratigraphic or rock-stratigraphic units. The relations among the various aquifers and confining units and the stratigraphic units that form them are shown on plate 1, a fence diagram modified from Miller (1986, pl. 30). A series of structure contour maps and isopach maps for the aquifers as well as the seven principal stratigraphic units that make up the Floridan aquifer system and its contiguous confining units is presented in Professional Paper 1403-B. These maps and associated cross sections were prepared by Miller (1986) based on geophysical logs, lithologic descriptions of cores and cuttings, and faunal data for the stratigraphic units, plus hydraulic-head and aquifer-test data for the hydrogeologic units.

The fence diagram shows the Floridan gradually thickening from a featheredge at the outcrop area of Alabama-Georgia-South Carolina to more than 3,000 ft in southwest Florida. Its maximum thickness is about 3,500 ft in the Manatee-Sarasota County area of southwest Florida. In and directly downdip from much of the outcrop area, the Floridan consists of only one permeable unit. Further downdip in coastal Georgia and

much of Florida, the Upper and Lower Floridan aquifers become prominent hydrogeologic units where they are separated by less-permeable rocks.

Overlying much of the Floridan aquifer system are low-permeability clastic rocks that are termed the upper confining unit. The lithology, thickness, and integrity of this confining unit has a controlling effect on the development of permeability in the Upper Floridan and the ground-water flow in the Floridan locally. (See later sections on transmissivity and regional ground-water flow.)

Plate 2 shows where the Upper Floridan is unconfined, semiconfined, or confined. Actually the Upper Floridan rarely crops out, and there is generally either a thin surficial sand aquifer or clayey residuum overlying the Upper Floridan. Sinkholes are common in the unconfined and semiconfined areas and provide hydraulic connection between the land surface and the Upper Floridan. In the semiconfined and confined areas, the upper confining unit is mostly the middle Miocene Hawthorn Formation, which consists of interbedded sand and clay that are locally phosphatic and contain carbonate beds. In southwest Florida, the carbonate beds locally form aquifers. Professional Papers 1403-E and 1403-F discuss these local aquifers in detail.

There are two important surficial aquifers overlying the upper confining unit locally: (1) the fluvial sand-and-gravel aquifer in the westernmost Florida panhandle and adjacent Alabama and (2) the very productive Biscayne aquifer (limestone and sandy limestone) of southeast peninsular Florida. Both of these aquifers occur in areas where water in the Floridan is saline; hence they are important sources of freshwater.

The Upper Floridan aquifer forms one of the world's great sources of ground water. This highly permeable unit consists principally of three carbonate units: the Suwannee Limestone (Oligocene), the Ocala Limestone (upper Eocene), and the upper part of the Avon Park Formation (middle Eocene). Detailed local descriptions of the geology and hydraulic properties of the Upper Floridan are provided in many reports listed in the references and especially in the summary by Stringfield (1966). The hydraulic properties section of this report discusses the large variation in transmissivity (as many as three orders of magnitude) within the Upper Floridan. Professional Paper 1403-B discusses the geologic reasons for these variations.

Within the Upper Floridan aquifer (and the Lower Floridan where investigated) there are commonly a few highly permeable zones separated by carbonate rock whose permeability may be slightly less or much less than that of the high-permeability zones. Many local studies of the Floridan have documented these permeability contrasts, generally by use of current meter traverses in uncased wells. For example, Wait and Gregg (1973) observed that wells tapping the Upper Floridan in the Brunswick, Ga., area obtained about 70 percent of their water from (approximately) the upper 100 ft of the Ocala Limestone and about 30 percent from a zone near the base of the Ocala. Separating the two zones is about 200 ft of less-permeable carbonate rock. Leve (1966) described permeable zones of soft limestone and dolomite and less-permeable zones of hard massive dolomite in the Upper Floridan of northeast Florida.

The Upper and Lower Floridan aquifers are separated by a sequence of low-permeability carbonate rock of mostly middle Eocene age. This sequence, termed the middle confining unit, varies greatly in lithology, ranging from dense gypsiferous limestone in south-central Georgia to soft chalky limestone in the coastal strip from South Carolina to the Florida Keys. Seven subregional units have been identified and mapped as part of the middle confining unit (see detailed descriptions in Professional Paper 1403-B). Much of the middle confining unit consists of rock formerly termed Lake City Limestone but referred to here as the lower part of the Avon Park Formation (table 1).

The Lower Floridan aquifer is comparatively less known geologically and hydraulically than the Upper Floridan. Much of the Lower Floridan contains saline water. For this reason and because the Upper Floridan is so productive, there is little incentive to drill into the deeper Lower Floridan in most areas. The Lower Floridan consists largely of middle Eocene to Upper Paleocene carbonate beds, but locally in southeast Georgia also includes uppermost Cretaceous carbonate beds. There are two important permeable units within the Lower Floridan: (1) a cavernous unit of extremely high permeability in south Florida known as the Boulder zone and (2) a partly cavernous permeable unit in northeast Florida and southeast coastal Georgia herein termed the Fernandina permeable zone. These units are further described in Professional Papers 1403-G and 1403-D, respectively.

Table 2 summarizes the geographic occurrence of aquifers and confining units within the Floridan aquifer system and shows the hydrogeologic nomenclature used in each Professional Paper. The units given in the table are hydraulic equivalents intended for use in describing and simulating the regional flow system. No stratigraphic equivalency or thickness connotation is intended in this table. For example, the Upper Floridan aquifer in the western Florida panhandle consists principally of the Suwannee (Oligocene) Formation. However, in central Florida the Ocala and Avon Park Formations constitute much of the high-permeability rock in the Upper Floridan.

(**REFERENCE 15** D(

BROWARD COUNTY ENVIRONMENTAL QUALITY CONTROL BOARD

500 S.W. 14th Court
Fort Lauderdale, Florida 33315
(305) 765-5881

Hazardous Material Facility License

OPERATION [X] CONSTRUCTION [ ] CLOSURE [ ]

LICENSE NO. HS-1373-88
ID # 1619446

OWNER/AGENT WILLIAM RIEDESEL, PRES
APPLICANT: ACRYLUX PAINT MFG CO INC
6010 POWERLINE RD
FT LAUDERDALE, FL 33309

FACILITY NAME/ADDRESS
WILLIAM RIEDESEL
ACRYLUX PAINT MFG CO INC
6010 POWERLINE RD
FT LAUDERDALE, FL 33309
Phone No. 772-0300

This license is issued under the provisions of the Code of Regulations of the Broward County Environmental Quality Control Board, hereinafter called the Code. The above-named applicant, hereinafter called licensee, is hereby authorized to perform the work or operate the facility shown on the approved drawings, plans, documents, and specifications submitted by applicant, and made a part hereof and described specifically below. If no objection to this license is received within 14 days, you will be deemed to have accepted it and all the attached terms and conditions.

NATURE OF BUSINESS: Paint manufacturing.

AREAS COVERED: One inside work and storage area; one outdoor storage area.

CONDITIONS:

The building serves as secondary containment with two inch high epoxy coated concrete curbs across the two south and the three north bay door exits.

A 7.3 cubic foot concrete wall and slab containment area exists for the 55 gallon drum of ammonia. The interior surfaces are coated with an impervious material and this area is covered to prevent storm water intrusion.

Application Received: 06/13/88
Issue Date: 09/27/88
Expiration Date: 09/27/89
As-Built Due Date: N/A
Autorevocation Date: N/A
Prepared by:TONY CASAS

This license is subject to General Conditions 1 through 12 and Specific Conditions 1, 2, 3, 5, and 7 on the back of this license.

Victor N. Howard

Victor N. Howard, P.E.
Pollution Control Officer

Renewal Application due: 07/29/89

HAZA)OUS MATERIAL FACILITY ! :ENSE

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations and restrictions set forth herein are accepted by the licensee an enforceable by the EQCB pursuant to Chapter 27 of the Broward County Environmental Quality Control Board (EQCB) Code. The EQCB will review this license periodically and may revoke the license, initiate administrative and/or judicial action for any violation of the conditions by the licensee, its agents, employees, servants or representatives.
2. This license is valid only for the specific uses set forth in the license application and any deviation from the approved uses may constitute grounds for revocation and enforcement action by the EQCB.
3. In the event the licensee is temporarily unable to comply with any of the conditions of the license, the licensee shall notify the PCO within 12 hours. Within 5 working days of the event, the licensee shall submit a written report to the PCO that describes the incident, its cause, the measures being taken to correct the problem and prevent its reoccurrence, the owner's intention toward repair, replacement, and reconstruction of destroyed facilities, and a schedule of events leading toward operation within the license conditions.
4. The issuance of this license does not convey any vested rights or exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any violations of federal, state or local laws or regulations.
5. This license must be available for inspection on licensee's premises during the entire life of the license.
6. By accepting this license, the licensee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, that are submitted to the EQCB, may be used by the EQCB as evidence in any enforcement proceeding arising under EQCB rules and regulations, except where such use is prohibited by Section 403.111, Florida Statutes.
7. The licensee agrees to comply with Chapter 27, Code of Regulations of the EQCB.
8. Any new owner of a licensed facility shall apply by letter for a transfer of license within thirty (30) days after sale or legal transfer. The transferor shall remain liable for performance in accord with the license until the transferee applies for and is granted transfer of license.
9. The licensee, by acceptance of this license, specifically agrees to allow access to the licensed source at reasonable times by EQCB personnel for the purposes of inspection and testing to determine compliance with this license and EQCB rules and regulations.
10. This license does not constitute a waiver of or approval of any other license that may be required for other aspects of the total project.
11. If the licensee wishes to renew the license or extend its term, he shall make application 60 days prior to its expiration. Expired licenses are not renewable.
12. In addition to the general conditions set forth above, each license issued by the EQCB shall contain specific conditions determined by site conditions and requirements pursuant to the regulations as determined by the PCO. Licensee agrees that specific conditions are enforceable by the EQCB for any violation thereof.

SPECIFIC CONDITIONS

1. An up to date Inventory List of hazardous material stored shall be submitted with license renewal and with applications for operation or construction licenses.
2. Report any hazardous waste to EQCB that leaves the facility by legible copy of manifest on a monthly and annual basis, by the fifteenth day of the following month.
3. A Spill Contingency Plan shall be prepared and kept on site. Upon discharge of any hazardous material immediately implement the Spill Contingency Plan. Discharges will be reported to EQCB within 12 hours as provided in General Condition 3.
4. Monitor wells shall be tested weekly.
5. Employees shall be trained in the handling of hazardous materials and the Spill Contingency Plan.
6. EQCB shall be notified for purposes of inspection 24 hours prior to removal of a tank. If there is evidence of release of product, a clean-up will be ordered and monitor wells shall be installed as approved by EQCB.
7. Hazardous material facilities shall have hazardous materials or wastes only in areas that have no floor drains or other means of discharge to septic tank or ground and have adequate secondary containment. Reactive materials shall be kept in separate secondary containments. Secondary containment areas shall be under cover and allow no storm water within. Waste storage areas require secondary containment.
8. Disassembly shall be done within a secondary containment area. All containers of fluids (engines, transmissions, fuel tanks, radiators, overflow tanks and hydraulic and windshield washer systems); their drained fluids; and undrained vehicles awaiting disassembly shall be stored within a secondary containment. Outside storage of the above parts is prohibited unless empty and stored with the fluid cavities open for inspection but not to storm water.

1212394 (ORAGE TANK FACILITY SECTION OF E
HAZARDOUS MATERIAL FACILITY LICENSE
OPERATION LICENSE

WAS: STO STC LICENSE NO. HS-1373-88
STOS STOC

NO. OF TANKS	CAPACITY X1000 GALS	TANK/LINE MATERIAL & PROTECTION	ABOVE OR UNDER GROUND	INSTALLATION DATE
3	1.5	FIBERGLASS	AG	01/01/85
2	2	FIBERGLASS	AG	01/01/85
3	3	FIBERGLASS	AG	01/01/85

Pump Type: N/A
Integral Piping System Leak Detector: N/A
Monitor Wells: N/A Total #: Continuous Monitoring:
Overflow/Excess Pressure Prevention System: N/A
Secondary Containment. Above Ground: 12/05/86
Below Ground: N/A
Tank and Integral Piping Replacement: N/A
Seal Floor Drains: N/A

Facility is INSIDE Public Wellfield 12" Drawdown Zone.
This license is subject to General Conditions 1 thru 12 and Specific Conditions 1 3 5

SPECIFIC CONDITIONS

1. Licensee shall maintain a log of the daily inventory per Section 27-10.062, b & c.
2. Monitor wells shall be tested weekly. Any indication of product shall be reported to EQCB within 24 hours (27-10.085).
3. An emergency clean-up plan shall be prepared and kept on site per 27-10.062, h.
4. Typical service station items such as motor oil, anti-freeze, hydraulic fluid and solvents are regulated under the conditions of this license and shall be stored properly.
5. Employees shall be trained in the handling of hazardous materials and the emergency cleanup plan.
6. EQCB shall be notified for purposes of inspection 24 hours prior to removal of a tank. If there is evidence of release of product, a clean-up will be ordered and a monitor well shall be installed.

HAZARDOUS MATERIAL INVENTORY LIST

LICENSE NO. HS-1373-88
ID # 1619446

EQCB CODE	TRADE NAME OF HAZARDOUS MAT'LS	CHEMICAL OR GENERIC NAME OF HAZARDOUS MAT'LS	CONTAINER SIZE	TOT QUANT ON-SITE (GAL/LBS)	MONTHLY USE (GAL/LBS)
12B		Mineral Spirits	55 gal	165 gal	100 gal
12B		Xylene	55 gal	220 gal	220 gal
11	Cosan PMA 100	Mercury	25 lb	200 lb	500 lb
18		Ammonia	55 gal	55 gal	55 gal
12B		Propylene Glycol	A.G. in 2 x 500 gal	1000 gal	500 gal
12B		Ethylene Glycol	A.G. in 2 x 500 gal	1000 gal	300 gal
20	E1381	Acrylic Resin	A.G. in 1 x 1500 gal	1500 gal	N/A*
20	E1381	Acrylic Resin	A.G. in 1 x 3000 gal	3000 gal	N/A*
20	OP 62	Acrylic Resin	A.G. in 1 x 2000 gal	2000 gal	N/A*
20	AC 507	Acrylic Resin	A.G. in 1 x 2000 gal	2000 gal	N/A*
20	AC 507	Acrylic Resin	A.G. in 1 x 1500 gal	1500 gal	N/A*
20	E1950	Acrylic Resin	A.G. in 1 x 3000 gal	3000 gal	N/A*
20	E1791	Acrylic Resin	A.G. in 1 x 1500 gal	1500 gal	N/A*
20	M/C 76	Acrylic Resin	A.G. in 1 x 3000 gal	3000 gal	N/A*
10	Mix Tanks	Paint	A.G. in 7 x 500 gal	N/A	N/A**
10	Finished Goods	Paint	1 gal 2 gal 5 gal	2000 gal	N/A**

*Licensed under storage tank regulations.
**Usage accounted for in above items -- not used in fee calculation.

LICENSE NO. HS-1373-88
ID # 1619446

Applicant indicates that no hazardous wastes are generated or disposed.

TOTAL MONTHLY USE:	1225
REGISTRATION FEE:	
HAZMAT FEE:	325
STORAGE TANK FEE:	100
LATE FEE:	
TOTAL FEE PAID:	425

REF.17

Official Lists of

Endangered and Potentially

Endangered Fauna and Flora in Florida

1 July 1988

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Compiled by Don A. Wood, Endangered Species Coordinator

Florida Game and Fresh Water Fish Commission

Scientific Name(s)	Common Name	Designated status[1] FGFWFC[2]	FDA[3]	USFWS[4]	CITES[5]
	VERTEBRATES				
Fish					
Acipenser brevirostrum	Shortnose sturgeon	E		E	I
Acipenser oxyrhynchus	Atlantic sturgeon	SSC		UR2	II
Ammocrypta asprella	Crystal darter	T		UR2	
Centropomus undecimalis	Common snook	SSC			
Cyprinodon variegatus hubbsi	Lake Eustis pupfish	SSC			
Etheostoma histrio	Harlequin darter	SSC			
Etheostoma okaloosae	Okaloosa darter	E		E	
Etheostoma olmstedi maculaticeps	Southern tessellated darter	SSC			
Fundulus jenkinsi	Saltmarsh topminnow	SSC			
Menidia conchorum	Key silverside	T			
Micropterus notius	Suwannee bass	SSC			
Micropterus sp. (undescribed)	Shoal bass	SSC			
Notropis callitaenia	Bluestripe shiner	SSC		UR2	
Notropis sp. (undescribed)	Blackmouth shiner	E		UR2	
Rivulus marmoratus	Rivulus	SSC			
Starksia starcki	Key blenny	SSC			
Amphibians and Reptiles					
Alligator mississippiensis	American alligator	SSC		T(S/A)	II
Ambystoma cingulatum	Flatwoods salamander			UR2	
Caretta caretta caretta	Atlantic loggerhead turtle	T		T	I
Chelonia mydas mydas	Atlantic green turtle	E		E	I
Chrysemys (=Pseudemys) concinna suwanniensis	Suwannee cooter	SSC		UR5	
Crocodylus acutus	American crocodile	E		E	I
Dermochelys coriacea	Leatherback turtle	E		E	I
Diadophis punctatus acricus	Big Pine Key ringneck snake	T		UR2	
Drymarchon corais couperi	Eastern indigo snake	T		T	
Elaphe guttata guttata	Red rat snake	SSC*			
Eretmochelys imbricata imbricata	Atlantic hawksbill turtle	E		E	I
Eumeces egregius egregius	Florida Keys mole skink	SSC		UR2	
Eumeces egregius lividus	Blue-tailed mole skink	T		T	
Gopherus polyphemus	Gopher tortoise	SSC		UR2	
Graptemys barbouri	Barbour's map turtle	SSC		UR2	
Haideotriton wallacei	Georgia blind salamander	SSC		UR2	
Hyla andersonii	Pine Barrens treefrog	SSC			
Kinosternon baurii	Striped mud turtle	E*		UR2	
Lepidochelys kempi	Atlantic ridley turtle	E		E	I
Macroclemys temminckii	Alligator snapping turtle	SSC		UR2	
Neoseps reynoldsi	Sand skink	T		T	
Nerodia fasciata taeniata	Atlantic salt marsh water snake	T		T	
Pituophis melanoleucus mugitus	Florida pine snake	SSC		UR2	
Pseudobranchus striatus lustricolus	Gulf hammock dwarf siren			UR2	
Rana areolata	Gopher frog	SSC		UR2	
Rana okaloosae	Bog frog	SSC			
Sceloporus woodi	Florida scrub lizard			UR2	
Stilosoma extenuatum	Short-tailed snake	T		UR2	
Storeria dekayi victa	Florida brown snake	T*			
Tantilla oolitica.	Miami black-headed snake; rimrock crowned snake	T		UR2	
Thamnophis sauritus sackeni	Florida ribbon snake	T*			
*Applicable in lower Florida Keys only					
Birds					
Aimophila aestivalis	Bachman's sparrow			UR2	
Ajaia ajaja	Roseate spoonbill	SSC			
Ammodramus maritimus juncicolus	Wakulla seaside sparrow	SSC		UR2	
Ammodramus maritimus mirabilis	Cape Sable seaside sparrow	E		E	
Ammodramus maritimus nigrescens	Dusky seaside sparrow	E		E	
Ammodramus maritimus pelonotus	Smyrna seaside sparrow			UR2	
Ammodramus maritimus peninsulae	Scott's seaside sparrow	SSC			
Ammodramus savannarum floridanus	Florida grasshopper sparrow	E		E	
Aphelocoma coerulescens coerulescens	Florida scrub jay	T		T	
Aramus guarauna	Limpkin	SSC			

Reference #16

OVERSIZED

DOCUMENT

MAP

REF. 18

NUS CORPORATION AND SUBSIDIARIES		TELECON NOTE
CONTROL NO.	**DATE:** May 3, 1990	**TIME:** 11:40 AM
DISTRIBUTION: Broward County Project Managers		
BETWEEN: Paddy Cunningham	**OF:** Fern Forest Nature Center	[redacted] (305) 970-0150
AND: William E. Vasser, NUS Corporation		

DISCUSSION:

Fern Forest Nature Center is a 254-acre regional park. It is home to 32 species of ferns, including the Hand adder's tounge fern (Ophioglossum palmatum), a state-designated endangered species. Also, the threatened (federal designation) Eastern Indigo snake may be found in the park.

The park is located in the Margate Estates area, northwest of F.L.E.A.

Rare and Endangered Biota of Florida
Peter C. H. Pritchard, SERIES EDITOR

Volume Five

PLANTS

Edited by Daniel B. Ward

Chairman, Special Committee on Plants
FLORIDA COMMITTEE ON RARE AND ENDANGERED PLANTS AND ANIMALS

Sponsored by the FLORIDA AUDUBON SOCIETY and FLORIDA DEFENDERS OF THE ENVIRONMENT in cooperation with the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION

Published for the FLORIDA COOPERATIVE EXTENSION SERVICE, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, UNIVERSITY OF FLORIDA

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(1978)

Table 1. Distribution of listed plants by county. E = listed as Endangered. T = listed as Threatened. R = listed as Rare. ? = uncertainty: part or all of the county is shown as occurring within the range, but no specific county records are known, or the species is believed to be no longer present in the county.

ALACHUA

Adiantum capillus-veneris (R)
Asplenium pumilum (E)
Blechnum occidentale (E)
Brickellia cordifolia (R)
Callirhoe papaver (T)
Cheilanthes microphylla (R)
? *Litsea aestivalis* (R)
Malaxis unifolia (R)
Peltandra sagittifolia (R)
Polygonum meisnerianum (R)
Rhapidophyllum hystrix (T)
Smilax smallii (T)
Zamia floridana (T)

BAKER

Harturightia floridana (R)
Linum westii (R)
? *Peltandra sagittifolia* (R)
? *Smilax smallii* (T)
Sphenostigma coelestinum (T)

BAY

? *Adiantum capillus-veneris* (R)
Drosera intermedia (R)
Gentiana pennelliana (T)
Hedeoma graveolens (T)
Hypericum lissophloeus (E)
Lupinus westianus (T)
Macbridea alba (E)
Oxypolis greenmanii (E)
Polygonella macrophylla (E)
Rhexia salicifolia (R)
? *Rhododendron austrinum* (T)
Sarracenia leucophylla (T)
Sarracenia rubra (R)
? *Smilax smallii* (T)
? *Stewartia malacodendron* (T)
Verbesina chapmanii (T)
Xyris longisepala (T)

BRADFORD

? *Adiantum capillus-veneris* (R)
? *Litsea aestivalis* (R)
? *Peltandra sagittifolia* (R)
? *Smilax smallii* (T)
Sphenostigma coelestinum (T)

BREVARD

Asclepias curtissii (T)
Ernodea littoralis (T)
Mallotonia gnaphalodes (T)

BREVARD (Cont.)

? *Monotropsis reynoldsiae* (E)
Nemastylis floridana (T)
? *Nolina atopocarpa* (E)
Ophioglossum palmatum (E)
Rhapidophyllum hystrix (T)
Zamia umbrosa (T)

BROWARD

Asplenium dentatum (T)
Asplenium serratum (E)
Coccothrinax argentata (T)
Commelina gigas (T)
Drosera intermedia (R)
Ernodea littoralis (T)
? *Gossypium hirsutum* (E)
Jacquemontia reclinata (E)
Mallotonia gnaphalodes (T)
Nemastylis floridana (T)
Okenia hypogaea (E)
Ophioglossum palmatum (E)
Pleopeltis revoluta (E)
Polygala smallii (E)
? *Remirea maritima* (E)
Tillandsia flexuosa (T)
Zamia floridana (T)

CALHOUN

Adiantum capillus-veneris (R)
Baptisia megacarpa (E)
? *Bumelia lycioides* (R)
Cornus alternifolia (E)
Drosera intermedia (R)
Gentiana pennelliana (T)
Kalmia latifolia (R)
Linum westii (R)
Oxypolis greenmanii (E)
Rhododendron austrinum (T)
Sarracenia leucophylla (T)
Smilax smallii (T)
Stewartia malacodendron (T)

CHARLOTTE

? *Asclepias curtissii* (T)
? *Ernodea littoralis* (T)
? *Gossypium hirsutum* (E)
Zamia floridana (T)

CITRUS

Adiantum capillus-veneris (R)
Anemone berlandieri (R)

CITRUS (Cont.)

Asplenium pumilum (E)
Cheilanthes microphylla (R)
? *Drosera intermedia* (R)
? *Peltandra sagittifolia* (R)
Rhapidophyllum hystrix (T)
Smilax smallii (T)
Zamia floridana (T)

CLAY

Asclepias curtissii (T)
Harturightia floridana (R)
Litsea aestivalis (R)
Peltandra sagittifolia (R)
Rhapidophyllum hystrix (T)
Rhododendron chapmanii (E)
Rudbeckia nitida (T)
? *Smilax smallii* (T)
Sphenostigma coelestinum (T)

COLLIER

Acrostichum aureum (R)
Asclepias curtissii (T)
Asplenium auritum (E)
Asplenium serratum (E)
Bulbophyllum pachyrhachis (E)
Burmannia flava (R)
Campylocentrum pachyrrhizum (E)
Campyloneurum angustifolium (E)
Catopsis nutans (E)
Celtis iguanaea (E)
Cereus gracilis (T)
Cheilanthes microphylla (R)
Encyclia pygmaea (E)
Epidendrum acunae (E)
Epidendrum nocturnum (T)
Ernodea littoralis (T)
? *Gossypium hirsutum* (E)
? *Guzmania monostachia* (E)
Jacquemontia curtissii (T)
Lepanthopsis melanantha (R)
Lycopodium dichotomum (E)
Maxillaria crassifolia (E)
Ophioglossum palmatum (E)
Restrepiella ophiocephala (E)
Roystonea elata (R)
Tillandsia flexuosa (T)
Tillandsia pruinosa (T)

COLUMBIA

Adiantum capillus-veneris (R)
Litsea aestivalis (R)
Peltandra sagittifolia (R)

SELECTED REFERENCES:

Small, J. K. 1938. Ferns of the Southeastern States. Lancaster, Pa. 517 pp.

PREPARED BY: Daniel B. Ward and Robert K. Godfrey.

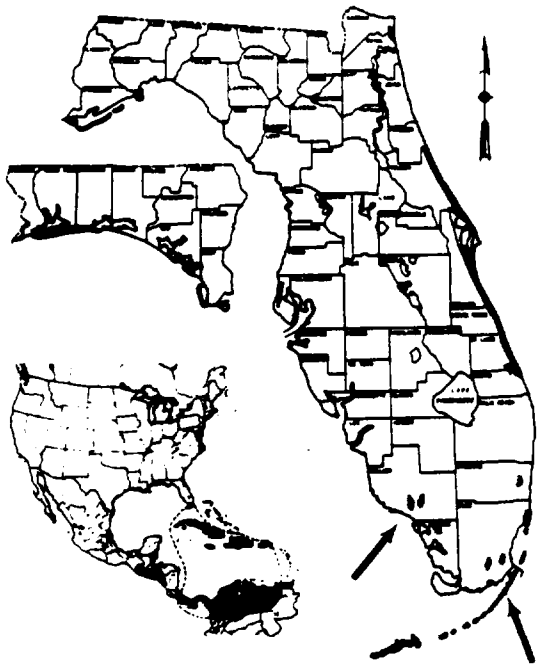
Endangered
BIRD'S-NEST SPLEENWORT

Asplenium serratum L.
Polypodiaceae
Filicinae

OTHER NAMES: New World Bird's-nest Fern.

DESCRIPTION: The Bird's-nest Spleenwort is a fern with an upright rootstock surmounted by a vase-shaped rosette of leaves, suggesting the form of a bird's nest. Each leaf is oblanceolate, undivided, with the margin rather evenly toothed. On large plants the leaves may be up to 70 or 80 cm long. From the midrib a multitude of straight, closely spaced veins run almost directly to the margin, each ending in a separate tooth. The sori are linear and lie directly on the surface of the veins but do not extend fully to the margins.

RANGE: This is a tropical fern, widespread in the West Indies and Central and South America. In Florida it is probably found at present only in Monroe, Dade, Broward, and Collier counties. Specimens collected in April 1877 by A. P. Garber, the discoverer of this species in the United States, were recorded as having been obtained at Miami; possibly his location was Matheson Hammock, where the species was formerly abundant. Correll (1938) has cited specimens from Lee and Volusia counties, areas from which it has long been extirpated.



Bird's-nest Spleenwort (*Asplenium serratum*)

HABITAT: The characteristic sites of this fern are on fallen logs, on stumps, or near the bases of tree trunks in the deep swamps of the Fakahatchee Slough, in the Deep Lake cypress strand, and in the somewhat drier but still dark and moist tropical hammocks.

SPECIALIZED OR UNIQUE CHARACTERISTICS: The genus *Asplenium* is a large one, and most species have pinnate or even bipinnate leaves. The Bird's-nest Spleenwort stands out because of its undivided leaves with the many parallel veins, but in other characteristics it is typical of the genus.

BASIS OF STATUS CLASSIFICATION: This plant has horticultural appeal and has become a target of the hordes of amateur and even commercial collectors, who gather it for greenhouse and patio ornamentation. The Matheson Hammock station, where Small (1921) said there was more of this fern than in all the other South Florida hammocks together, is now largely depleted by this rapacious collecting. The surviving stations are largely protected by distance and inaccessibility.

RECOMMENDATIONS: This fern is presently given token protection, as are most ferns, by its inclusion (even though not specifically listed) in the Preservation of Native Flora Law. Since it is a particularly attractive plant for greenhouse cultivation, however, it is regularly taken from the wild by horticulturists. This collecting, more than habitat destruction, has now made it a very rare plant. Matheson Hammock, presently owned and protected by Dade County, still retains a few plants and, if closer control of collection cannot be established in the Collier County cypress swamps, will soon be the only surviving station for the species in the United States.

SELECTED REFERENCES:

Correll, D. S. 1938. A county check-list of Florida ferns and fern allies. Amer. Fern Jour. 28:11–16, 46–54, 91–100.

Small, J. K. 1921. Historic trails, by land and by water. Jour. N.Y. Bot. Gard. 22:193–222.

PREPARED BY: Daniel B. Ward.

Endangered
APALACHICOLA WILD-INDIGO

Baptisia megacarpa Chapm.
Leguminosae
Dicotyledoneae

DESCRIPTION: The Apalachicola Wild-indigo is a perennial herb, to about 8–10 dm tall. The stems are spar-

RANGE: The Burrowing Four-o'clock is known in Florida only from a few locations along the lower east coast. Elsewhere it is found only along the Gulf Coast of Mexico, from Veracruz to Yucatán.

HABITAT: The habitat of this plant is restricted to the ocean side of the coastal dunes. It is often the closest plant to the water's edge.

SPECIALIZED OR UNIQUE CHARACTERISTICS: This plant is almost unique in that it buries its developing fruit beneath the soil as does the Peanut (*Arachis hypogaea*). The specific epithet for both of these plants is derived from words meaning "beneath the ground." Other than for this developmental trait, the two plants are not related. The subterranean fruit ensures that the seeds are well placed in a suitable habitat for germination and growth, but at the same time inhibits the ease with which this plant is distributed.

BASIS OF STATUS CLASSIFICATION: J. K. Small and J. J. Carter discovered *Okenia hypogaea* in 1903 on the sand dunes opposite Miami, a site now wholly destroyed by hotel construction. Small later (1919) reported that it extended from Soldier Key, north to Baker's Haulover, Dade County. It was then found farther north, to Juno Beach, northern Palm Beach County. Most of the stations once known along this coast have been obliterated by construction and by dune removal, and increasing recreational use of beach areas imperils even those plants in state-owned parks.

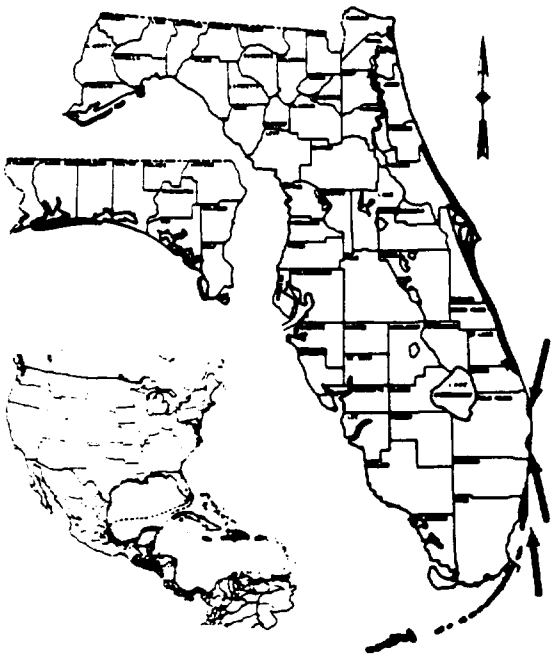
Fig. 27. Burrowing Four-o'clock (*Okenia hypogaea*): Flowering branch X 2/5; habit X 1/8.

RECOMMENDATIONS: All possible remaining areas of beach dunes on which the Burrowing Four-o'clock occurs should be protected from development. Those areas in state parks should be protected by steps to guide public pathways and heavy usage away from the dunes where this plant grows.

SELECTED REFERENCES:

Small, J. K. 1919. *Okenia hypogaea*. Addisonia 4:11–12.

PREPARED BY: Daniel B. Ward.



Burrowing Four-o'clock (*Okenia hypogaea*)

Endangered
HAND FERN

Ophioglossum palmatum L.
Ophioglossaceae
Filicinae

OTHER NAMES:
Scientific synonym: *Cheiroglossa palmata* (L.) Presl

DESCRIPTION: The Hand Fern is not readily recognized by the novice as belonging to that plant group. It consists of a scaly, globose rhizome from which hang usually 2 or 3 pendent leaves, each consisting of a fleshy but flat "hand"-shaped blade. These leaves may have anywhere from 2 to 6 or 7 elongate, usually sharp-tipped lobes, the "fingers." The leaf with its long petiole may droop 40 cm below the attachment of the rhizome. The spore-bearing structures are attached near the juncture of the blade with its petiole;

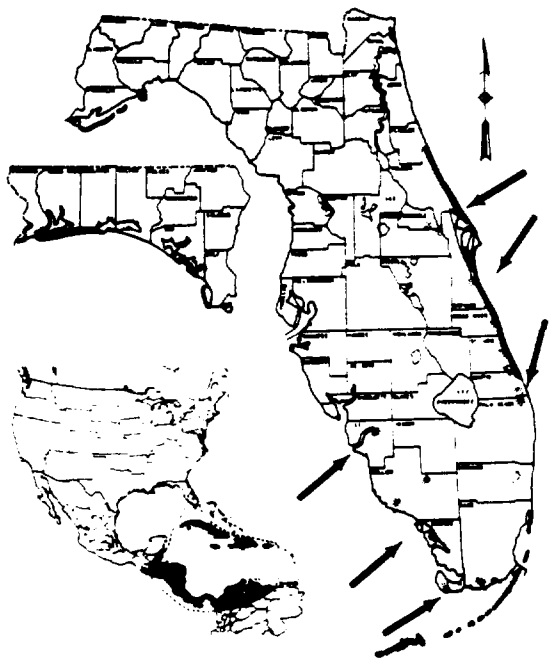
these are narrowly oblong, 1–6 in number, and 3–5 cm long.

RANGE: This is a tropical fern, once found throughout the West Indies and the tropical portions of Central and South America. In Florida it once was locally common in the southern part of the peninsula and extended north to Manatee County on the West Coast and Seminole and Orange counties in the east. It is now found only in a few low hammocks.

HABITAT: The almost exclusive habitat of this fern is the detritus-filled base or "boot" of Cabbage Palm trees (*Sabal palmetto*) in low, moist, and very shaded hammocks. As the leaves sequentially die, decay, and fall from the trunk, a process that takes a number of years, the Hand Ferns germinate, thrive, and then, with the boot, fall to the ground where they too die.

SPECIALIZED OR UNIQUE CHARACTERISTICS: The form of this plant, with its hand-shaped, pendent leaves, is like no other in Florida.

BASIS OF STATUS CLASSIFICATION: The range of this bizarre plant has dwindled under the twin assaults of drainage and fire and of the rapacious enthusiasm of collectors. In 1938 J. K. Small wrote: "The plants are very sensitive to fire, and since forest-fires and prairie-fires are becoming more frequent in districts where they formerly were rare, this fern is fast disappearing from localities where it once was abundant. So destructive have been the fires that in many localities where comparatively few years ago the Hand Fern could be gathered literally by the wagon load it is now extinct. The few stations now known to fern students are guarded with great secrecy."



Hand Fern (*Ophioglossum palmatum*)

Fig. 28. Hand Fern (*Ophioglossum palmatum*): Fertile lobe X 3/2; habit X 1/2.

The three and a half decades that have passed since Small's statement have carried the Hand Fern very much closer to the point of its total disappearance from Florida. The vastly increased population of South Florida, with the more-than-proportional increase in the number of persons interested in collecting and raising our rarer native plants, has meant the destruction of the last remnant of this fern from areas where, even when Small wrote, it was still common. In a single documented example—when the trail through Mahogany Hammock in the Everglades National Park was opened in April 1960—three trees in the hammock were known to bear Hand Fern; by June of that year there was none.

RECOMMENDATIONS: The habitat in which the Hand Fern once grew is not yet absent from South Florida, for it is often poorly drained and ill adapted to development. But those places where this fern still occurs must be protected from fire and increasingly from the depredations of collectors. Without effective restrictions to its collection, the Hand Fern will not long persist in Florida.

SELECTED REFERENCES:

Mesler, M. R. 1974. The natural history of *Ophioglossum palmatum* in South Florida. Amer. Fern Jour. 64:33–39.

SELECTED REFERENCES:

Harper, R. M. 1950. A preliminary list of the endemic flowering plants of Florida. Quart. Jour. Fla. Acad. Sci. 12:1–19.

Ward, D. B. 1963. Southern limit of *Chamaecyparis thyoides*. Rhodora 65:359–363.

Wherry, E. T. 1936. The ranges of our eastern Parnassias and Sedums. Bartonia 17:17–20.

PREPARED BY: Daniel B. Ward.

Endangered
EVERGLADES PEPEROMIA

Peperomia floridana Small
Piperaceae
Dicotyledoneae

OTHER NAMES:
Scientific synonym: *Rhynchophorum floridanum* (Small) Small

DESCRIPTION: The Everglades Peperomia is an epiphyte. The stems are stout, with the branches elongated and often vine-like. The leaves are ovate to orbicular, 5–10 cm long, and narrowed to a short petiole. The inflorescence is a short-stalked spike usually 6–10 cm long, with the rachis up to 5 mm thick.

RANGE: This species is endemic to South Florida, mostly or perhaps entirely in Dade County.

HABITAT: The plant is epiphytic, mainly on the trunks of oak trees in hammocks.

SPECIALIZED OR UNIQUE CHARACTERISTICS: This is one of the two species of Florida *Peperomia* that are epiphytic. The other, *Peperomia obtusifolia* (L.) Dietr., is usually restricted to decaying bark of logs and stumps and is seldom found far above the ground. The Everglades Peperomia prefers the sound bark of living wood and often occurs far above the ground in the upper branches of the trees. It is unusually attractive growing in combination with ferns, orchids, and bromeliads.

BASIS OF STATUS CLASSIFICATION: In 1926 J. K. Small described this plant as apparent "upon entering any hammock of the Everglades Keys." Now only a few surviving hammocks contain plants of this species.

RECOMMENDATIONS: This plant may be preserved only by protection of the few surviving hammocks where it is still to be found.

SELECTED REFERENCES:

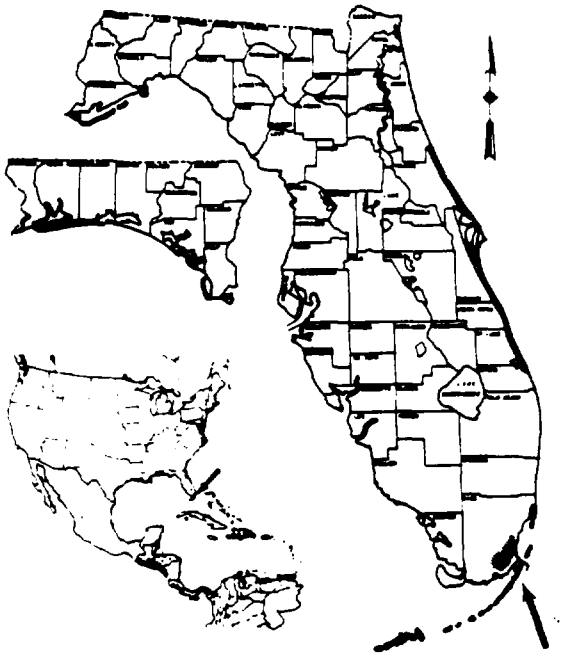
Long, R. W. and O. Lakela. 1971. A Flora of Tropical Florida. Univ. of Miami Press. Coral Gables, Fla. 962 pp.

Small, J. K. 1926. An additional species of *Peperomia* from Florida. Torreya 26:109–110.

Small, J. K. 1931. The wild pepper-plants of continental United States. Jour. N.Y. Bot. Gard. 32:210–223.

Small, J. K. 1933. Manual of the Southeastern Flora. N.Y. 1554 pp.

PREPARED BY: John Popenoe.



Everglades Peperomia (*Peperomia floridana*)

Endangered
STAR-SCALE FERN

Pleopeltis revoluta (Spreng. ex Willd.) A. R. Smith
Polypodiaceae
Filicinae

OTHER NAMES:
Scientific synonyms: *Pleopeltis astrolepis* (Liebm.) Fourn.; *Polypodium astrolepis* Liebm.

DESCRIPTION: Star-scale Fern is a small epiphytic fern. Its rhizome is a dark brown, slender strand, about 2 mm in diameter, creeping and branching extensively on its host tree. The rhizome is covered with long, dense, rusty brown hairs that almost conceal small, blackish scales. The fronds are scattered, with very short stipes that are quickly margined and broaden into a linear or lance-linear blade from 6 to 15 cm long and 5 to 15 mm broad. On the lower leaf surface, on either side of the midrib, is a single row of circular or, more generally, oblong sori. Protruding among the sporangia of the sorus are special protective hairs, or

paraphyses, which expand into multi-rayed, star-like, peltate discs (whence the common name) that very quickly become detached from the maturing sorus.

RANGE: This is a plant of the lands bordering the Caribbean. It extends from tropical South America to southern Mexico and to the Antilles. A single station has recently been discovered in northeastern Broward County, Florida.

HABITAT: Star-scale Fern is an epiphyte, with rhizomes that creep over the trunks and branches of trees in tropical hammocks. The Florida collections have been obtained from the limbs of Pond-apple (*Annona glabra*).

SPECIALIZED OR UNIQUE CHARACTERISTICS: This fern is a tropical epiphyte, one of the species that demonstrates the floristic ties of Florida with the New World tropics.

BASIS OF STATUS CLASSIFICATION: Only a very few plants of this species are known in Florida, from a very small area. Because of its rarity, it is now sought by collectors who wish it for cultivation as well as for scientific specimens. The location in which it grows is threatened by drainage and residential development.

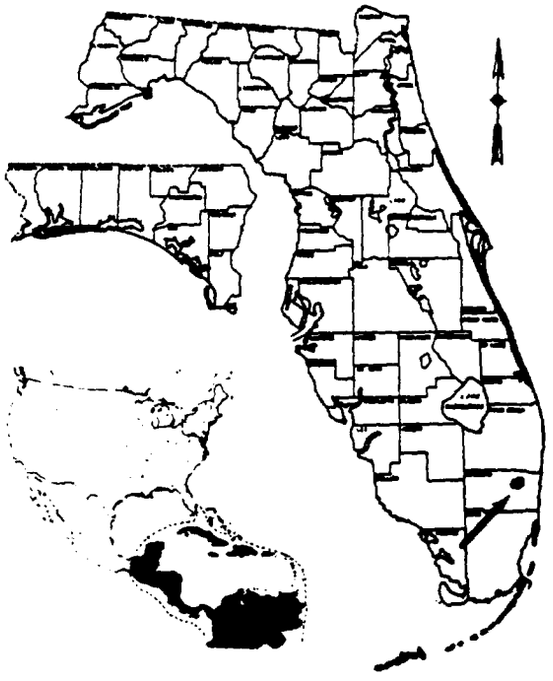
Fig. 32. Star-scale Fern (*Pleopeltis revoluta*): Habit X 1/3; underside of fertile frond X 2/3; peltate scale X 15.

RECOMMENDATIONS: Habitat preservation, by restrictions against further drainage and development, is essential if this fern is to survive in the state. Even beyond habitat preservation, the species must be guarded against collection by those attracted by its rarity.

SELECTED REFERENCES:

Howard, R. A. 1977. Flora of the Lesser Antilles, Vol. 2, Pteridophyta. By G. R. Proctor. Arnold Arboretum, Jamaica Plain, Mass. 414 pp.

PREPARED BY: Daniel B. Ward.



Star-scale Fern (*Pleopeltis revoluta*)

Endangered
LEWTON'S POLYGALA

Polygala lewtonii Small
Polygalaceae
Dicotyledoneae

DESCRIPTION: Lewton's Polygala is a perennial, with a small taproot and a crown from which grow annually 1 to several stems that spread and then curve erect. At the tips they are about 20 cm. The leaves are small and scalate and are scattered alternately along the lower part of the stem, with several smaller leaves appearing in the axil of each larger one. The normally opening flowers, in the upper third of the stem, are an attractive purple. Each flower is no more than 4 mm long and has a conspicuous feature 2 enlarged and winglike petals between which the largest petal forms a pouch and a minute tuft of finger-like projections. The fruit is an oblong capsule, partly enclosed by the persistent larged sepals.

Lewton's Polygala is closely related to two species, *P. crenata* and *P. polyg*

CERCLA ELIGIBILITY QUESTIONNAIRE

Site Name: Acrylux Paint Co.

City: Ft. Lauderdale, Florida State: _____

EPA I.D. Number: FLD981029572

I. CERCLA ELIGIBILITY	YES	NO
Did the facility cease operations prior to November 19, 1980?	___	X
If answer YES, STOP, facility is probably a CERCLA site If answer NO, Continue to Part II		

II. RCRA ELIGIBILITY	YES	NO
Did the facility file a RCRA Part A application?	___	X
If YES:		
1) Does the facility currently have interim status?	___	___
2) Did the facility withdraw its Part A application?	___	___
3) Is the facility a known or possible protective filer? (facility filed in error)	___	___
4) Type of facility: Generator___ Transporter___ Recycler___ TSD (Treatment/Storage/Disposal)___		
Does the facility have a RCRA operating or post closure permit?	___	___
Is the facility a late (after 11/19/80) or non-filer that has been identified by the EPA or the State? (facility did not know it needed to file under RCRA)	___	___

If all answers to questions in Part II are NO, STOP, the facility is a CERCLA eligible site.

If answer to #2 or #3 is YES, STOP, the facility is a CERCLA eligible site.

If #2 and #3 are NO and any OTHER answer is YES, site is RCRA, continue to Part III.

III: RCRA SITES ELIGIBLE FOR NPL	YES	NO
Has the facility owner filed for bankruptcy under federal or state laws?	___	___
Has the facility lost RCRA authorization to operate or shown probable unwillingness to carry out corrective action?	___	___
Is the facility a TSD that converted to a generator, transporter or recycler facility after November 19, 1980?	___	___

RECONNAISSANCE CHECKLIST FOR HRS2 CONCERNS

Instructions: Obtain as much "up front" information as possible prior to conducting fieldwork. Complete the form in as much detail as you can, providing attachments as necessary. Cite the source for all information obtained.

Site name: Acrylux Paint Company
City, County, State: Ft. Lauderdale, Broward County, Florida
EPA ID No.: FLD981029572
Person responsible for form: Bob Tolford
Date: April 23, 1990

Air Pathway

Describe any potential air emission sources onsite: Volatilized paint thinners could enter the atomsphere.

Identify any sensitive environments within 4 miles: Canals which are frequented by the endangered Manatee are located within 4 miles of the facility.

Identify the maximally exposed individual (nearest residence or regularly occupied building - workers do count): Workers are at the facility.

Groundwater Pathway

Identify any areas of karst terrain: None

Identify additional population due to consideration of wells completed in overlying aquifers to the AOC: None

Do significant targets exist between 3 and 4 miles from the site? BCUD Wellfield 1-A, and the Broadview Wellfield.

Is the AOC a sole source aquifer according to Safe Drinking Water Act? (i.e. is the site located in Dade, Broward, Volusia, Putnam, or Flager County, Florida) Yes.

Surface Water Pathway

Are there intakes located on the extended 15-mile migration pathway? No

Are there recreational areas, sensitive environments, or human food chain targets (fisheries) along the extended pathway? Although surface water has no apparrent route, (It appears that surface water would percolate into the ground at the facility) the Atlantic Ocean is within 15 miles of the site and many water sport-related recreational activities take pla there.

Onsite Exposure Pathway

Is there waste or contaminated soil onsite at 2 feet below land surface or higher? Unknown

Is the site accessible to non-employees (workers do not count)? No, all activities take place inside th building, and the dumpsters are locked inside a chain-link fence.

Are there residences, schools, or daycare centers onsite or in close proximity? North Andrews Elementary School is about 1 mile to the east.

Are there barriers to travel (e.g., a river) within one mile? No

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-13
July, 1981

EPA

Potential Hazardous Waste Site

Site Inspection Report

Site Inspection Report

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D981029572

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Acrylux Paint Manufacturing Company	6010 Powerline Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Ft. Lauderdale	Fl.	33309	Broward	011	17

09 COORDINATES LATITUDE: 26 12 0. | LONGITUDE: 080 09 15.0

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
MONTH DAY YEAR	☐ ACTIVE ☐ INACTIVE	1984 (BEGINNING YEAR) present (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☒ B. EPA CONTRACTOR NUS corp. (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO
Bob Tolford	Surveyor/technician	NUS corp.	(404)938-7710
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO
Margo Westmoreland	Health Specialist	NUS corp.	(404)938-7710
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
N/A			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Brian Farrier	EPA	(404)347-5065

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Bob Tolford	FIT ~~IV~~	NUS Corp.	(404) 299-9424	7 12 90 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	098102 9572

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☒ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER _____
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: 6-10

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☒ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☒ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			Waste generated at this
OLW	OILY WASTE		unknown	facility includes 1 gallon/year of spent
SOL	SOLVENTS		unknown	solvents and 1 gallon/year of oils
PSD	PESTICIDES			and resins.
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Propylene glycol	999	drums		
SOL	Ethylene glycol	107-21-1	"		
OLW	Acrylic resins	8050-09-7	"		
SOL	Xylene (xylol)	1330-20-7	"		
SOL	Titanium dioxide	13463-67-7	"		
SOL	Ammonia	7664-41-7	"		
OLW	Pine oil	8002-9-3	"		
IOC	~~Amor~~ Amorphous Silica	7631-86-9	"		
BAS	Calcium Carbonate	1317-65-3	"		
SOL	Triton	9002-93-1	"		

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Willard Murray, 8/8/85, Potential Hazardous Waste Site Preliminary Assessment Form

EPA FORM 2070-13(7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FLD	981029572

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10,000 ±
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
remote possibility of a release to groundwater.

01 ☐ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Facility is 1.5 miles from a canal, no storm drains are on the site. water would percolate to groundwater.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Remote possibility, a dust collector is used to control paint powders while poured.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 100 ±
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
some substances onsite pose a fire hazard and are potentially explosive.

01 ☐ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: < 10,000
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Small chance of workers and general public being exposed. All operations are inside the building.

01 ☐ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: < 0.5 (Acres)
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
possible, if a spill outdoors were to occur.

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10,000 ±
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Nearest drinking water wellfield is 3/4 mile to the NE.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
possible exposure to toxic fumes and skin irritants.

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 10,000 ±
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
possible groundwater contamination

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D 981029572

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None observed, the lawn was immaculate

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names(s) of species)
None noted

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
U N Known

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids/Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION
none reported

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
none reported

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
none nearby

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
none reported

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
none reported

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS
offsite reconnaisance team observed good house and groundskeeping.

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)
Willard Murray, 8/8/85, potential Hazardous Waste Site Preliminary Assessment Form.
NUS Corp. Field Logbook # FL-2139 for Acrylux, 4/23/90.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FLD	981024572

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				No Known Status
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	1-10	55 gal
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

☒ A. BUILDINGS ON SITE

06 AREA OF SITE

1/2 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☒ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

None observed, all operations are indoors.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

See ~~page~~ part III, this form.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: FLD | 02 SITE NUMBER: 980829572

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☒
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 3/4 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)
☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 10,000 + | 03 DISTANCE TO NEAREST DRINKING WATER WELL 3/4 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
_____ (ft)	S.E.	80 (ft)	_____ (gpd)	☒ YES ☐ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)
Municipal wells in the area are screened between 80' and 120' in the Biscayne Aquifer.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: flat land	☐ YES ☒ NO	COMMENTS: flat land

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)
☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
none really, water all would percolate down at the site	☐	_____ (mi)
	☐	_____ (mi)
	☐	_____ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 6458 NO OF PERSONS	B. 42500 NO OF PERSONS	C. 92,000 NO OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 2/3 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
unknown	0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)
Commercial/industrial area

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FLD	981029572

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☒ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
120 (ft)	none noted (ft)	unk.	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
13 (in)	4.5 (in)	0.0 %	no slope	0.1 %

09 FLOOD POTENTIAL

SITE IS IN — YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE N/A OTHER

A. _____ (mi) B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

2 (mi)

ENDANGERED SPECIES: eastern indigo snake

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 0.1 (mi)	B. 2/3 (mi)	C. — (mi)	D. — (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

site is ± 10' a.m.s.l., ocean is 4 miles to the east. The terrain is flat. Average drop in elevation towards the east is 7.5"/¼mi.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USGS Topographic 7.5' maps of Florida: Ft. Lauderdale, Pompano Beach.
R.A. Freeze and J.A. Cherry, Groundwater (Englewood Cliffs, N.J.: Prentice-Hall, Inc. 1979).
Rainfall Frequency Atlas of the United States (Washington, DC: GPO, 1961)
Climatic Atlas of the U.S. (Washington, DC: GPO June, 1968)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FLD	981029572

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER		No Samples Taken	
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
	None

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NUS corp. in file
(Name of organization or individual)

03 MAPS ☐ YES ☒ NO

04 LOCATION OF MAPS

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FLD	981029572

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Acrylux Paint Co.		N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
6010 Powerline Road			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Ft. Lauderdale	Fl	33309			

(PARENT COMPANY (if applicable) columns: 08–14)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first) / IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Unknown			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Potential Haz Waste site Preliminary assessment Form 8/8/90

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FLD	981029572

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	04 SIC CODE
Acrylux Paint Co.		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE
6010 Powerline Road	Ft. Lauderdale	Fl.	33301

08 YEARS OF OPERATION	09 NAME OF OWNER
6	Same

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER	04 SIC CODE
UnKnown		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Same as last page.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FLD	991029572

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE: FLD | 02 SITE NUMBER: 981029572

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: 991029572

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FLD	981029572

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

ACRYLUX PAINT CO.
FLD 981029572
PRELIMINARY ASSESSMENT

A. SITE DESCRIPTION. The Acrylux Paint Mfg. Co. manufactures white, water soluble acrylic paints. The facility is located in an industrial/commercial area, 1/2 mile east of the Ft. Lauderdale Airport, at 6010 Powerline Avenue, Broward County, Ft. Lauderdale, Florida. Acrylux moved to this location in March, 1984 from its previous location at 1131 NE 7th Avenue, Ft. Lauderdale.

B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. Spent solvents, waste oils and greases used to manufacture, mix and package acrylic white paint are handled and stored in 6-10 drums which are stored in an on-site building. All of the spent solvents and oily wastes are shipped off-site, and the rinsewater which is used to clean the paint storage tanks is reused. A dust collector is used to control air quality while powdered paints are being poured. There have been no violations at this location and site inspections have noted the good housekeeping practices used; however, no sampling has been conducted.

C. NATURE OF HAZARDOUS MATERIALS. The paint solvents and oily wastes generated at the site are toxic, corrosive, volatile, highly reactive and potentially explosive if exposed to heat.

D. ROUTES OF CONTAMINATION. Possible routes of contamination include surface water, air, drinking water, groundwater used for irrigation and direct contact.

E. POSSIBLE AFFECTED POPULATION AND RESOURCES. Area residents are provided with drinking water from the Ft. Lauderdale Executive/Prospect municipal wellfield. The wellfield draws from the Biscayne Aquifer which is a shallow, unconfined, sole-source aquifer.

The site is located less than 1/4 mile east of the wellfield. Contamination of the aquifer and wellfield is possible, but not probable, as no discharges or spills have been recorded. The site is also located 1000 feet northeast of a lake and within 1 1/2 miles of a feeder canal. Potentially contaminated groundwater or surface runoff could contaminate surface water supplies, impacting recreational users and aquatic flora and fauna.

Workers and the general public may come in direct contact with the wastes, since the site is not fenced and access is not restricted. Workers may also be injured in the event of an explosion or fire.

F. RECOMMENDATIONS AND JUSTIFICATIONS. Hazardous wastes are properly contained on-site and disposed off-site. BCEQCB site inspections document the good housekeeping practices at this site since it began in March, 1984. A low priority for inspection is therefore recommended for this site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D 981029572

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Acrylux Paint Manufacturing Co.	6010 Powerline Avenue (located at 1131 NE 7th Ave - until 3/84)				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Ft. Lauderdale	FL	33309	Broward	011	17
09 COORDINATES LATITUDE: 26 12 00.0	LONGITUDE: 080 09 08.0				

10 DIRECTIONS TO SITE (Starting from nearest public road): Proceed north through Ft. Lauderdale on Interstate 95. Exit from I-95 onto Route 870, heading west. Go 30 yards after the turnoff, then turn right onto Powerline Road and proceed 3/4 of a mile to NW 61st Street. The facility is located on the southeast corner of Powerline Road and NW 61st Street.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
Acrylux Paint Manufacturing Co.	6010 Powerline Avenue			
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER	
Ft. Lauderdale	FL	33309	(305) 772-0300	
07 OPERATOR (If same as owner)	08 STREET (Business, mailing, residential)			
Ms. Kay Lutchko - Manager	same			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER	
same			(305) 772-0300	

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3001 DATE RECEIVED: 12 / 19 / 80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 10 / 31 / 84 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: Broward County Environmental Quality Control Board (ECEQCB) (Specify)

See Attachment "A"

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN	March 1984 (BEGINNING YEAR)	present (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Paints, solvents and resins used in the paint manufacturing process are stored on-site in drums and disposed of by an authorized waste company.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
All hazardous materials are shipped off-site, and the rinsewater used to clean the paint storage tanks is re-used. A dust collector is used while powdered paints are being poured.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER		
Eric Nuzie	FDER	(904) 488-0190		
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Willard Murray	N/A	E.C. Jordan Co.	(207) 775-5401	08 / 08 / 85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

LWE

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D 981029572

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☒ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: 6-10

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☒ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			The waste generated at the site includes 1 gallon/year spent solvents and 1 gallon/year oils and resins.
OLW	OILY WASTE	unknown		
SOL	SOLVENTS	unknown		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Propylene glycol	999	DR		
SOL	Ethylene glycol	107-21-1	DR		
OLW	Acrylic resins	8050-09-7	DR		
SOL	Xylene (xylol)	1330-20-7	DR		
SOL	Titanium dioxide	13463-67-7	DR		
SOL	Ammonia	7664-41-7	DR		
OLW	Pine oil	8002-09-3	DR		
IOC	Ammorphous silica	7631-86-9	DR		
BAS	Calcium carbonate	1317-65-3	DR		
SOL	Triton	9002-93-1	DR		

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analyses, reports)

Broward County EQCB Facility Inspection Reports: 06/80, 02/15/85
Broward County EQCB Survey February 8, 1985

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D981029572

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ — 04 NARRATIVE DESCRIPTION

Possible spills or leaks of hazardous materials from the storage drums may contaminate the groundwater. All hazardous substances, however, are stored in drums and wastes are shipped off-site for disposal. No spills or discharges at this site have been reported. No groundwater samples have been taken.

01 ☒ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ — 04 NARRATIVE DESCRIPTION

The facility is located 1000 feet northeast of a small (1000 ft. by 500 ft.) quarry lake, and 1 1/2 miles from a feeder canal. Potential spills or leaks onto the ground surface could contaminate surface water. No discharges or spills have occurred, however. No surface water samples have been taken.

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Remote potential. A dust collector is used to control air quality while powdered paints are being poured.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ — 04 NARRATIVE DESCRIPTION

Some of the substances stored on-site pose a low to medium fire hazard and are potentially explosive if exposed to heat. Good housekeeping practices, however, have prevented any accidents.

01 ☒ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 3001-10,000 — 04 NARRATIVE DESCRIPTION

There is a small chance that the workers and general public could be exposed to the hazardous wastes by direct contact, since access to the site is not restricted. The hazardous materials on-site are toxic, corrosive, highly volatile and potentially explosive.

01 ☒ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: <0.5 (Acres) — 04 NARRATIVE DESCRIPTION

Potential spills or leaks of solvents and oily wastes could contaminate the soil. No spills or discharges, however, have been reported. No soil samples have been collected.

01 ☒ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ — 04 NARRATIVE DESCRIPTION

Area residents are provided with drinking water from the Ft. Lauderdale Executive/ Prospect municipal wellfield which produces from the shallow and permeable Biscayne Aquifer. The site is located less than 1/4 mile east of the wellfield. Potential spills or leaks on-site could contaminate the wellfield. No spills or discharges have been reported, however.

01 ☒ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 1-100 — 04 NARRATIVE DESCRIPTION

Workers handling the hazardous substances may be exposed to toxic fumes and skin irritants. Workers may also be injured in the event of on-site fires or explosions. No fires or explosions have been reported.

01 ☒ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+ — 04 NARRATIVE DESCRIPTION

Acrylux Paint is located in an industrial/commercial area and is not fenced, guarded or posted to restrict access. Area residents may be exposed to hazardous substances via potentially contaminated drinking water, groundwater used for irrigation or surface water.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D981029572

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Contact with contaminants may damage plant life. There was no observed damage to the grass or small plants on-site, and no spills or discharges have been reported.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names(s) of species)

Contact with contaminants may damage wildlife. No spills or discharges have been reported, however.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Remote potential. No spills or discharges have been reported, and the solvents and oily wastes present at the site do not generally bioaccumulate.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None reported.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Acrylux Paint was located at 1131 NE 7th Avenue, Ft. Lauderdale, until March, 1984. At their previous location they discharged contaminated rinsewater into a drainfield.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10,000+

IV. COMMENTS

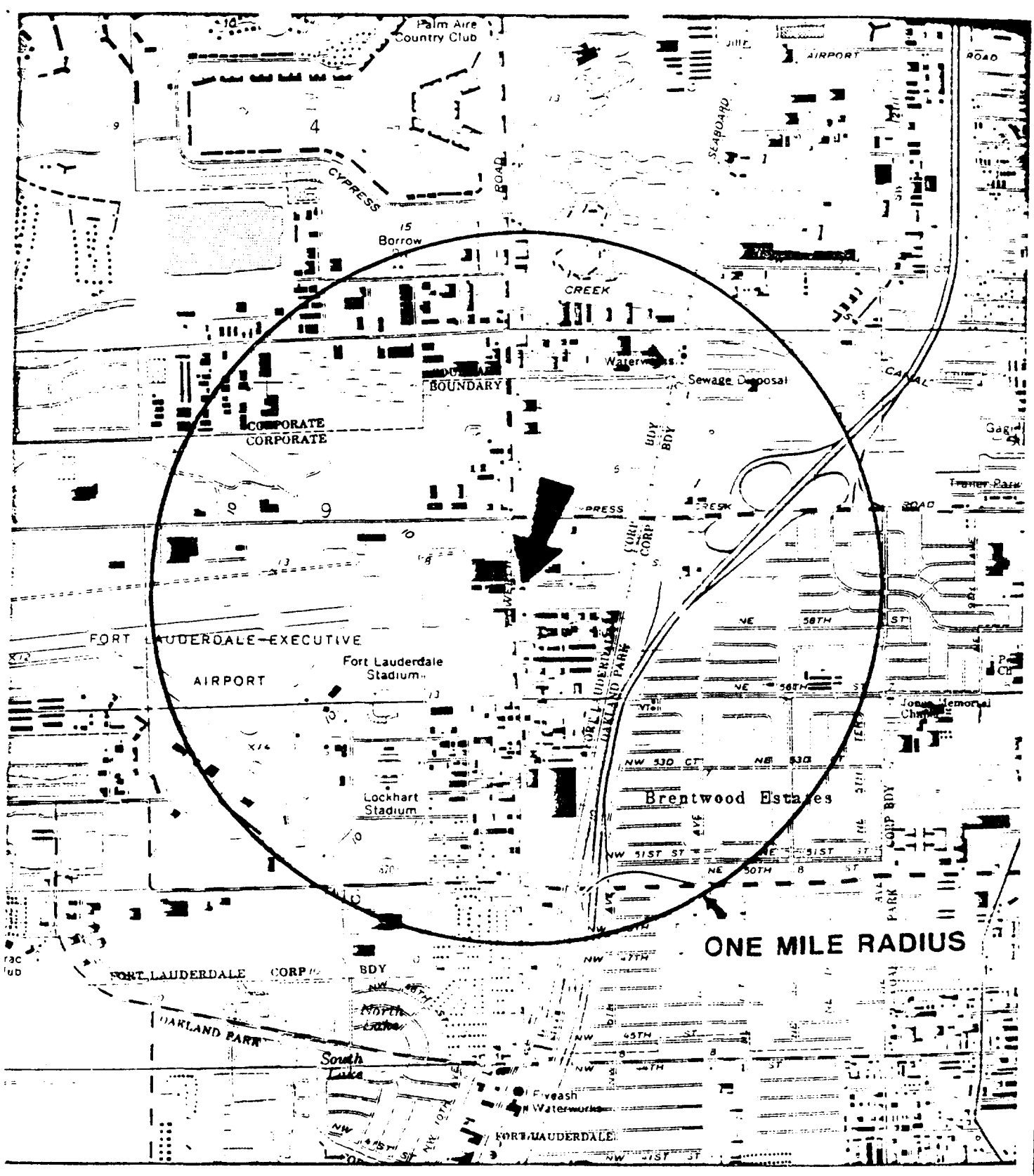
A windshield survey conducted July 31, 1985 noted that the grounds and building were well maintained, and the facility used good housekeeping practices.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See attached reference list.

ATTACHMENT A
ACRYLUX PAINT MFG. CO.
FLD
ON-SITE INSPECTIONS

DATE	AGENCY	SAMPLES	COMMENTS
7/31/85	E.C. Jordan Co. for FDER	No	Windshield survey (off-site inspection): Inspectors noted that the grounds and buildings were well maintained and the facility had good housekeeping.
2/8/85	BCEQCB	No	Inspectors noted proper disposal methods.
10/31/84	BCEQCB	No	No problems noted.
8/15/85	BCEQCB	No	No problems noted.



SCALE 1 : 24000

0 1/2 1 MILE

1000 0 1000 2000 FEET

N

SITE LOCATION MAP

Acrylux Paint Mfg. Co.

6010 Powerline Avenue

USGS QUAD Ft. Lauderdale North

DATE 1983

EC JORDAN CO.

REFERENCE LIST

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15. U.S. Geological Survey, Topographic Map, 1-24,000 Series.

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